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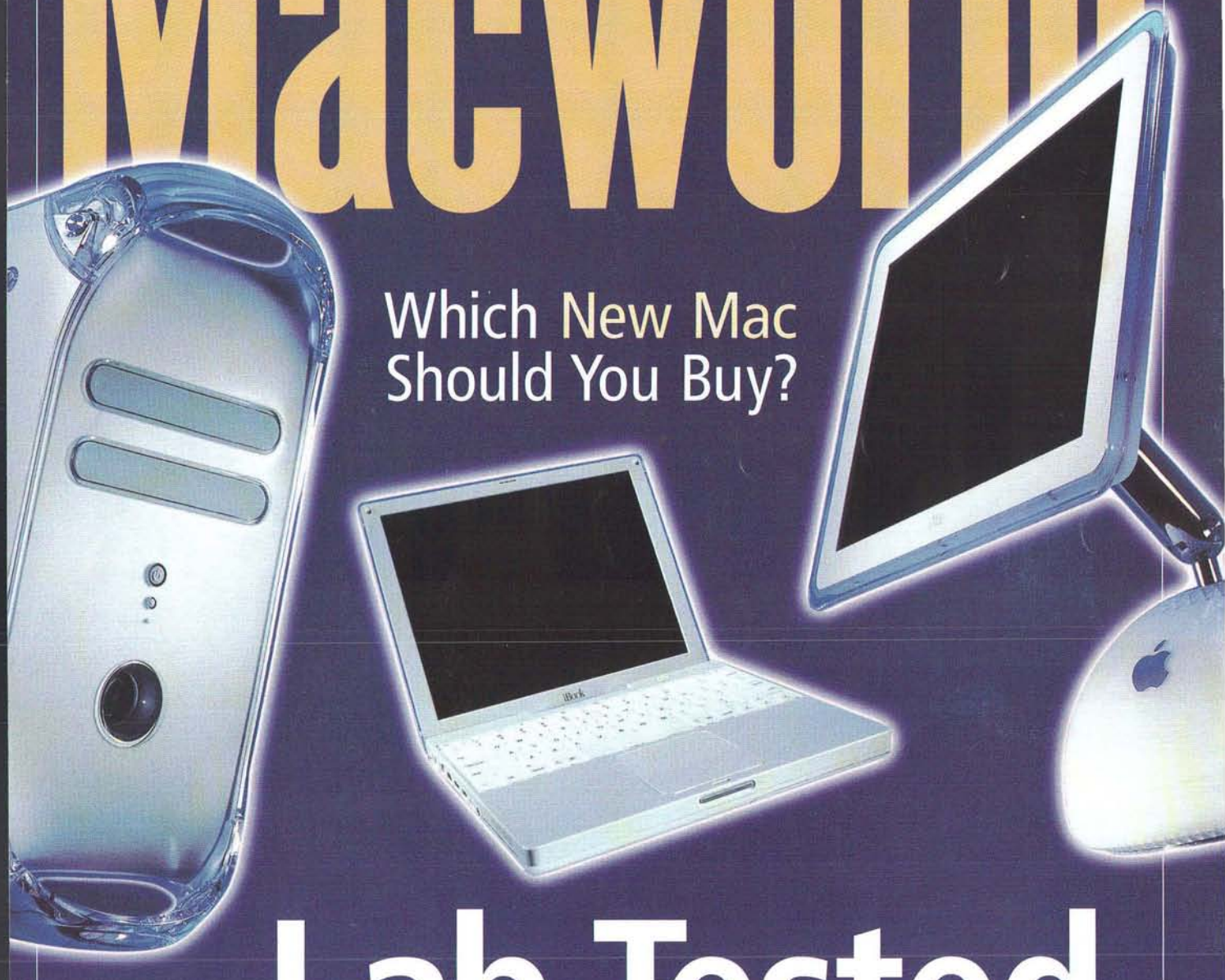
THE MAC PRODUCT EXPERTS
May 2002

PRO VIDEO After Effects 5.5 and Final Cut Pro 3 Put to the Test, page 28

Macworld



Which New Mac Should You Buy?

Lab Tested

Reviewed | Three All-New Power Mac G4s | 14.1-Inch iBook | Flat-Panel iMac

XPRESS vs INDESIGN

Which Page-Layout Program Reigns Supreme? page 60

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From New Macs to Page-Layout Programs, Choosing Is Tough

Decisions, Decisions

YOU CAN BELIEVE THE HYPE—THE NEW iMAC IS A VERY cool machine. Shortly after I sat down for my first extended session on one, I wanted to take it home: its flat screen is wonderful and bright, its performance is quite good, and its overall feel is excellent. I've heard some folks complain about the design, but I think it works.

Then I played around on one of the new Power Macs with two 1GHz PowerPC G4 chips, and I walked away wanting one of those, too.

And last year, we saw Apple return to the top of its game in the portables market—with the Titanium PowerBook G4, which is nearly as powerful as a desktop Mac, and the iBook, an excellent compact laptop for all but the most-demanding tasks.

While the Power Mac hasn't changed as much as Apple's portables or the iMac, the changes there—both in price and performance—have been solid. But I keep finding myself drawn to the iMac, even though it lacks many of the things I want in a Mac: expandability, top-of-the-line performance, and a large display.

This new iMac is very different from its predecessor. When I first saw the original iMac, I thought that it was pretty cool, in a "this would be a good computer for my mom" sort of way. That's not the case with the new model: even the $1,300 iMac, with its CD-RW drive and 700MHz G4 processor, looks like a great machine for me in many ways.

Apple's latest enhancements to its hardware line have made choosing a Mac harder than ever. In this issue, Jason Snell shows you what to consider when you're deciding where to plunk down your money. He also puts the top-of-the-line iMac through its paces, and I review the updated Power Macs. Granted, there are no big surprises in any of the new pro desktop models—but there is a potential sleeper hit in the $2,300 Power Mac G4/933, a screamer packed with all the right extras.

Page-Layout Marathon

Choosing a Mac is a big deal, but people get downright religious about their choice of applications, especially when the choice is in the publishing arena. This month, David Blatner looks at the near-simultaneous releases of QuarkXPress 5.0 and Adobe InDesign 2.0.

For the past decade, the real choice for publishing professionals has been between newer and older versions of XPress. (And Quark has had its own problems getting users to upgrade to new releases in a timely manner.) This time around, it truly is a free-for-all, since Adobe appears to have its act together with InDesign 2.0. I've been experimenting with that program, and I really like it—and I've been using XPress since 1990 and think that it's still a damned good product in its own right.

The big problem for Adobe isn't how well InDesign 2.0 stacks up against XPress 5.0, though; it's inertia. For good reason, designers, publishers, and service bureaus are reluctant to change from one product to another. That, and XPress's feature set, has helped Quark maintain its position as the market leader for all these years. Adobe seems to understand this, and it has continually enhanced InDesign with the right tools, features, and support. For the first time in years, there may actually be a horse race in the page-layout market—but it's going to be a *long* race, not a sprint.

Covering Digital Cameras

One of today's most vibrant product categories is digital imaging: given the rate at which new cameras, peripherals, and imaging-related software packages come out, we could fill *Macworld*'s *Reviews* section every month with evaluations of digital-imaging products.

We've been looking for a better way to cover this vital category, and this month we debut a new column in our *Reviews* section. In *Keller on Cameras*, Jeff Keller, the editor of the highly regarded Digital Camera Resource Page (www.dcresource.com), will periodically look at a group of new cameras and offer his valuable insights and advice. For his first column, Jeff takes a look at new 4-megapixel cameras from Canon and Olympus.

> There will be a horse race in the page-layout market, but it'll be a *long* race, not a sprint.

In addition to Jeff's coverage, we'll continue to discuss and evaluate digital cameras throughout the magazine. This month, we've got reviews of Nikon's Coolpix 5000 and Olympus's E20N; next month's issue will feature an in-depth look at the digital photo studio, with a look at new photo printers, photo-printing services, and more. □

Let me know what you think—good or bad—about *Macworld* in general or anything else Mac-related. You can drop me an e-mail, at rick_lepage@macworld.com, or join the discussions in our forums, at www.macworld.com. I'd love to hear from you.

PHOTOGRAPH BY BETTINA SALOMON

May 2002 www.macworld.com

Macworld

Incorporating MacUser

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50 **The Fast Crowd**
JASON SNELL AND RICK LEPAGE
Want to know more about Apple's hot new hardware and how it compares with the company's other systems? Read our reviews of the flat-panel iMac; the 800MHz, 933MHz, and dual-processor 1GHz Power Mac G4s; and the 14.1-inch iBook. Then check out our advice on choosing the system that's right for you.

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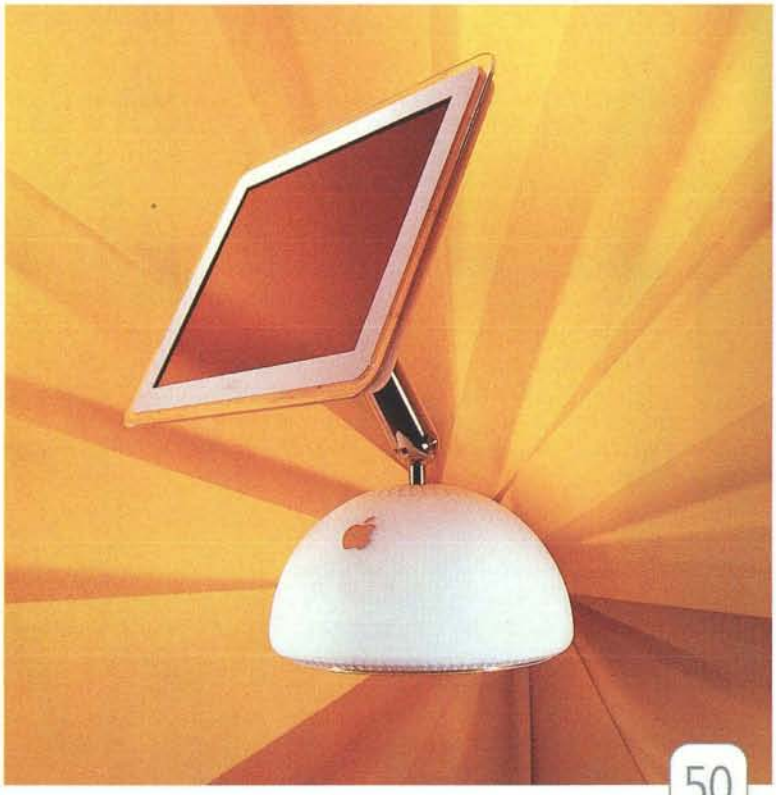
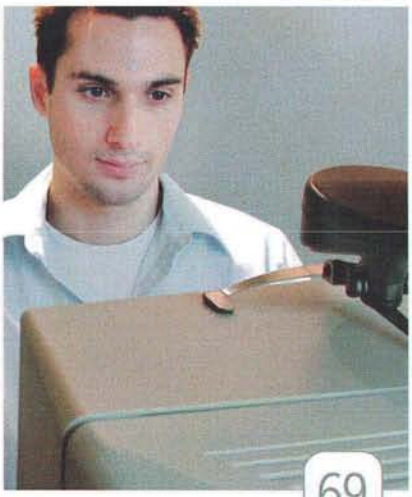
60 **QuarkXPress versus InDesign**
DAVID BLATNER
The newly minted QuarkXPress 5.0 and Adobe InDesign 2.0 are competing for the title of best page-layout application. We take a look at everything from table creation and Web design to print capabilities, and pick the top performer in each category. The results may surprise you.





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PETER COHEN
One thing this month's three games—Sheep, Myth III: The Wolf Age, and Harry Potter and the Sorcerer's Stone—have in common is that they're all extremely entertaining.

On the Cover:
Designer, Paul Carpenter; Photoshop Artist, Stephen Sugg

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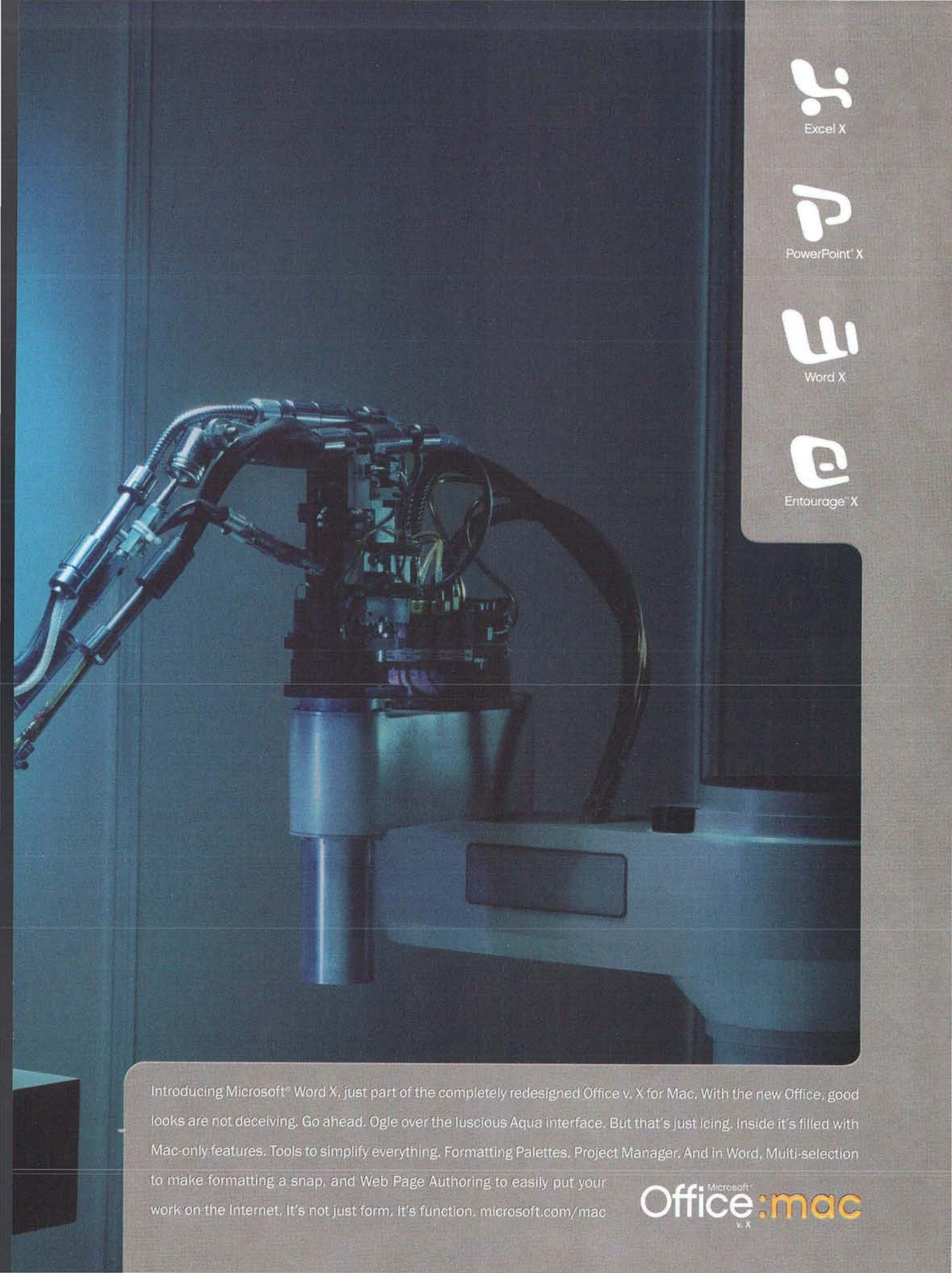
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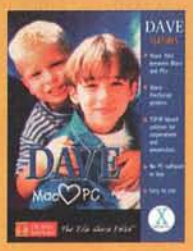

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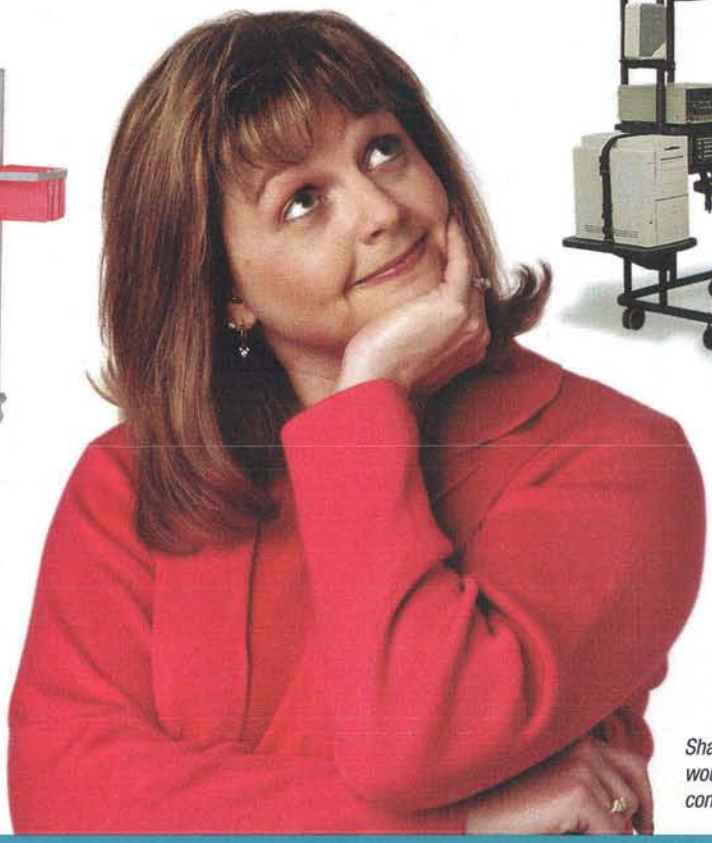

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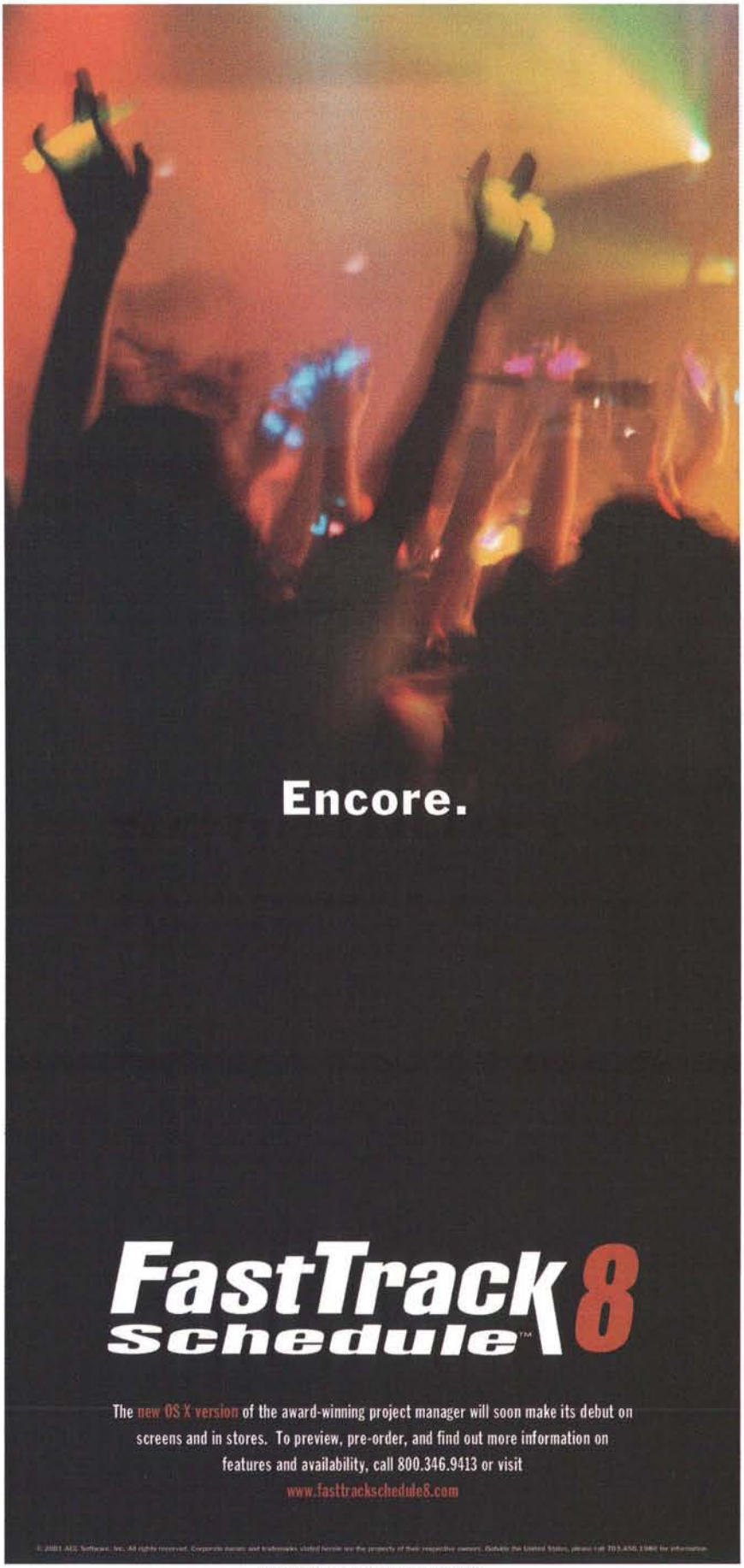

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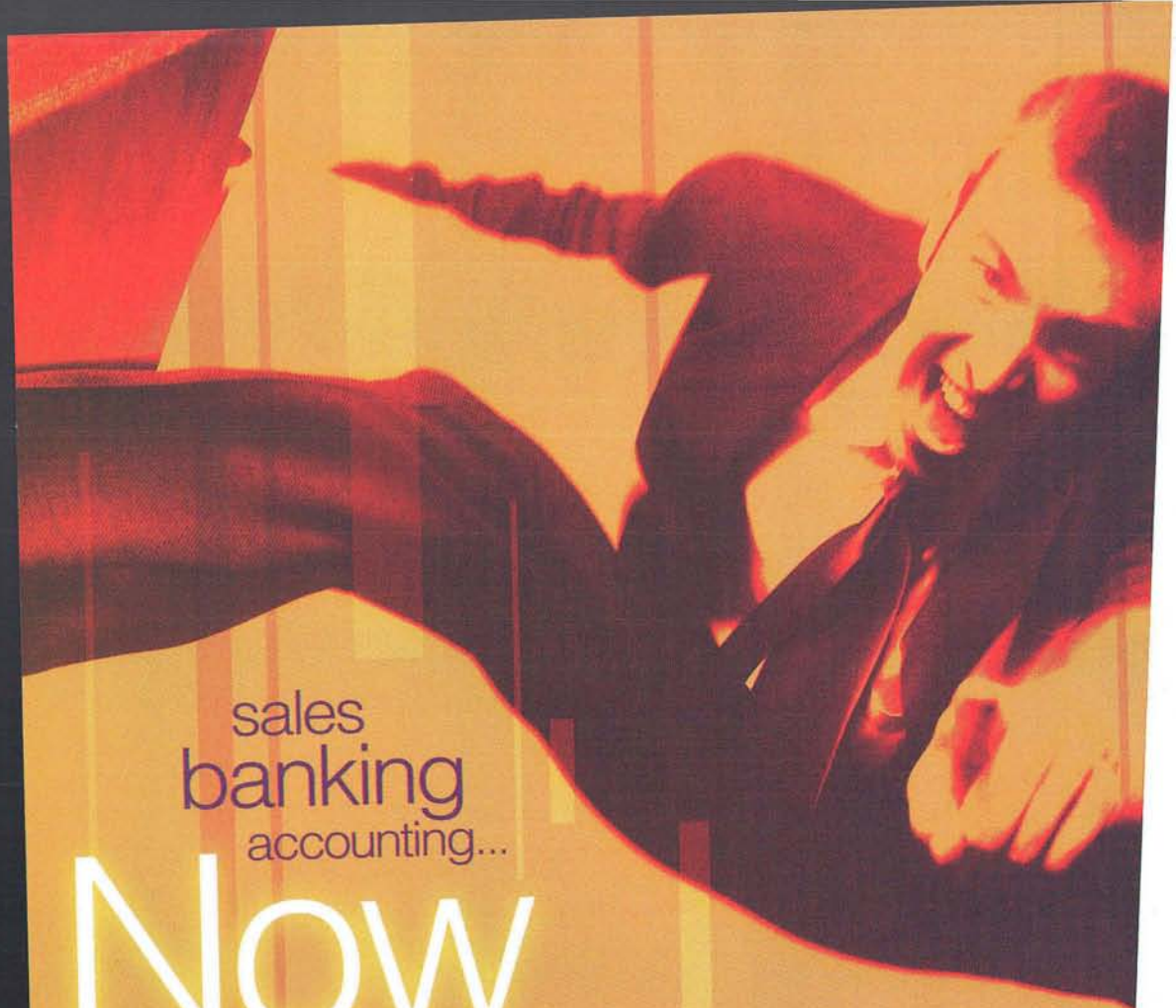

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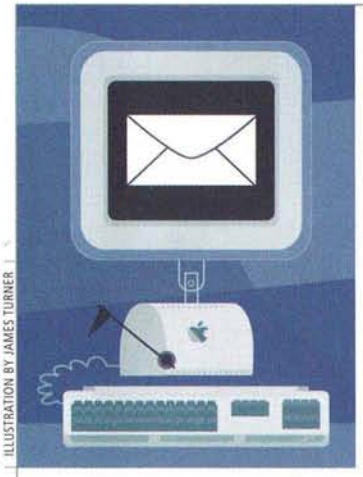

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FEEDBACK

Prize Patrol

In our February 2002 issue, we listed the winners of 25 Editors' Choice awards, which we'd handed out to makers of 2001's outstanding hardware and software. But to hear some of our readers tell it, a few of our winners should have let someone else accept the trophies. And our readers have ideas for awards of their own: Best Display Choice (an LCD monitor); Strangest Ad Campaign (Microsoft Office v. X); and Most Talked-About New Product of 2002 (the redesigned iMac). Will Apple's flat-panel wonder take home top honors from next year's Eddy awards? You'll just have to wait and see. □

Readers' Choice

JEFF SCOTT

By choosing the Epson Stylus C80 as the winner and the Stylus Photo 820 as the runner-up in the printer category ("The 17th Annual Editors' Choice Awards," February 2002), *Macworld* left me and all other Stylus Scan 2500 owners hanging out to dry. Epson doesn't write OS X drivers for these printers; therefore, my personal editor's choice is to never buy anything from Epson again. But thanks to Lexmark, my all-in-one, OS X prayers have been answered natively.

VINCE ANGELONI

You forgot one category in the Editors' Choice Awards: Most Microsoft-like Tactic. And the winner would have to be Apple, for its locked grip on DVD burning on the Mac. PC users can buy external DVD burners that come loaded with DVD-authoring software, but if you own a pre-SuperDrive Mac, you're completely out of luck. Sure, you can buy an external SuperDrive to burn DVDs, but in addition to spending between $500 and $700 for the DVD burner, you must spend $1,000 on DVD Studio Pro. I might as well buy a new Mac.

The Big Picture

FRANK HASSLER

Reading your review of monitors ("*Macworld*'s Ultimate Buyers' Guide: Monitors," February 2002), I was struck by the differences in power consumption between a 17-inch LCD and a 19-inch CRT. I did some quick math using your numbers (38 watts and 140 watts, respectively) and calculated that the LCD model uses about 75 percent less electricity than the CRT model, so the LCD costs about 75 percent less to operate. At 2,000 hours of use a year (8 hours a day, 5 days a week, 50 weeks a year) and $0.09 per kilowatt-hour, the LCD costs $18.36 less to run per year. Over the lifetime of the monitor, the gap in price narrows between the LCD and CRT. Not only that, you're doing the earth some good when you save money on your electrical bill.

JEFF BINDER

The article about monitors says that the higher your monitor's resolution, the less VRAM is available for refresh rates. This isn't how it works. VRAM does store the image that's currently on screen, but that image can't come close to filling it up. (For example, recent computers have 16MB to 64MB of VRAM, yet a 1,600-by-1,200-pixel resolution at 16-bit color requires only 3.84MB). 3-D–accelerated games and applications use the rest of the VRAM for *texture memory*—storage of textures and other images. The monitor, not the amount of VRAM, is what determines the maximum refresh rate at a given resolution. Just open the OpenGLInfo application, which comes with the OS X developer tools. It displays the amount of free texture memory. If you change the refresh rate, the amount of available texture memory does not change. This makes sense. If you have a 17-inch monitor, it'll probably only manage a 1,280-by-1,024-pixel resolution at a low refresh rate. If you get a 19-inch monitor, however, it should easily manage that resolution at a reasonable refresh rate, even with the same graphics card.

Office Space

MATIAS BILBAO

Thank you for your article on Microsoft Office v. X (*Reviews*, February 2002). It explained Entourage's inability to synchronize with Palm's software, right as my OS X–incompatible Palm CD arrived in the mail. I returned it and saved $50.

MARTIN M. MUNE

For the most part, I agree with your review of Office v. X. One thing that really gets me, though, is the comment about Office checking for duplicate copies running over the network: "Macworld Lab has confirmed that the check is contained within the LAN and does not send any information over the Internet to Microsoft, so this shouldn't raise privacy concerns." Why, after all these years of covering products from the likes of Adobe and Quark, have you suddenly decided to make privacy an issue? Companies have the right to protect their software—even Microsoft. Maybe you should write an extensive article on why companies have gone to such lengths to protect their software.

TOM HASTINGS

Is it just me, or has anyone else noticed that in its ads for Office v. X, Microsoft seems to treat the product as if it were a virus?

JAMES WYATT

I'm a little baffled to have read such a positive Office v. X review, which says that this program is fast. The main problem I have with the program is lack of speed. On my 500MHz iBook (2001 version), both Word and Excel are so slow at scrolling and typing that they feel unresponsive. Even moving through text with the arrow keys causes visible delays. When I resize windows, the outline doesn't move along with the cursor. Like your reviewer, I have seen screen-redraw problems. Unlike your reviewer, I haven't consistently seen these go away when I stop scrolling. Often, when I open a new window in

Word, it opens behind another window. AutoText also works poorly. Finally, Word X crashes much more frequently, in my experience, than Word 98. I'm seriously considering migrating back to Office 98.

Small Tablet, Big Heart

DAVID McKNIGHT

In your review of graphics tablets (February 2002), you say that the small size of the Graphire2's work area makes its included mouse of limited use. This surprises me because I find that the mouse is a real joy to use and far more valuable than the pen. The tablet's 4-by-5-inch live area easily accommodates the real estate of a large monitor. Simply set acceleration and tracking speed to medium or high, and you won't need a big tablet. The lighter weight of the mouse and smaller live area of the tablet seem more ergonomic. While I do wish that Wacom would get rid of Graphire2's tablet cord, it's still a damn good tablet.

Toolbar Time

CARY McKEOWN

Your article "Customize OS X's Finder Toolbar" (*How-to*, February 2002) failed to mention the toolbar's biggest failings. First, it's a global toolbar that you can't customize on a per-folder basis, as you can with Views in the Finder. Second, there should be a Customize Toolbar item in a contextual menu, when and if there is a contextual menu for the toolbar. Finally, you should be able to directly resize the toolbar, as you can with NextStep's Shelf or OS X's Dock. Like most of Aqua, the toolbar is overly basic, underpowered, and feature-poor. Why is Apple moving so slowly on fixing Aqua and OS X?

New iMac, New Views

DAVID MARICICH

I've seen the new iMac. Impressive. I've heard all the hype and positive predictions. Exciting. But I can't figure out why Steve Jobs doesn't strike at the heart of the problem. Most people will not drop a grand on something that's not obviously compatible with the computer they use at work—a PC. With applications such as Virtual PC and the Unix-based OS X, why not introduce and market the Mac's ability to run PC programs? Heck, let's call it the Mac iPC—a computer that seamlessly connects Mac and PC environments, two computers in one.

BRUCE LAMMERS

I am amused by reader comments in *Macworld* and *Time* saying that 95 percent of the world uses Windows. Though my first computer was a Mac, I bought a PC because my company switched to PC-only software, and I bought one for my kids because they whined about the lack of Mac games. As it turns out, my kids tell me that for new games, Microsoft's Xbox and the Nintendo GameCube are the way to go. I've had better luck running my work software on my Power Mac G4 using Virtual-PC than on my PC laptop; and everything else I do on a computer involves the Internet, digital photography and video, and Quicken. My next computer will be a flat-panel iMac. Apparently, I'm not missing out on whatever 95 percent of the world does on their PCs.

TIM HICKS

Amidst the enthusiastic comments about the flat-panel iMac, there was no mention of the fact that one of the new models ships with only 128MB of RAM. Am I wrong in thinking that you actually need 256MB of RAM to run OS X? This inadequate RAM configuration is just a scam to make the iMac's true price appear to be less than it is. It's like a carmaker advertising the price of a truck with a small four-cylinder engine, knowing that 99 percent of buyers will upgrade to the big V6. It looks like a great machine, but I wonder about its marketing.

CHARLES KEFAUVER

As I watched Steve Jobs's opening keynote at San Francisco's Macworld Expo, my hopes were high that I'd finally have my own digital hub at a reasonable price. G4 processor, flat screen, SuperDrive: it seemed perfect. I'd finally be able to have a Mac connected to my stereo system and my TV. I could use it as an MP3, DVD, and DivX player. I could use it to watch my photos as slide shows on my TV and even use it as a Web server. But when I visited Apple.com for the technical details, the ugly truth came out—no video-out port. The new iMac's VGA port (mirroring only) doesn't let you connect it to a TV. How can the iMac be a digital hub if you can't do something as basic as plug it into your TV?

Timely Edits

CAMERON J. YEE

Thank you for the article on low-res editing in Final Cut Pro 2.0 (*How-to*, January 2002). I had spent all morning looking through the manual for that very information and had essentially given up on it for the day. Fortunately, the office copy of *Macworld* showed up on my desk, giving me all the information and direction I was looking for.

OS X—for Better or Worse?

JEFF JOHNSON

I am amazed by reader criticism of Apple and OS X in *Macworld*. I recently upgraded our small office systems to Windows XP and OS X, linked to an OS X server. The migration went smoothly, and we're now peacefully coexisting. As with the previous Mac OS, which forced me to suffer through incompatible third-party add-ons to make my Mac fully functional, the transition is worth the trouble. We've got the most advanced, securest, and stablest operating system in the world. Thanks, Apple, for having the guts to deliver it.

MICHAEL PELTSMAN

Unlike OS 9, OS X doesn't support a software base station for AirPort. I used to have my iMac connected to an iBook with AirPort, without an AirPort Base Station. To use OS X, I have to spend another $300 just to return to the state I was in with OS 9. What a shamefully overhyped system.

Follow instructions on the GDIF Web site (http://homepage.mac.com/gdif/masqfirewall.html) to set up a software base station via Terminal. Programs such as BrickHouse ($25; http://personalpages.tds.net/~brian_hill/brickhouse.html) can also make the process easier.—Ed.

Post comments on our forums (www.macworld.com), or send them by mail to Letters, *Macworld*, 301 Howard Street, 15th Floor, San Francisco, CA 94105; via fax to 415/442-0766; or electronically to letters@macworld.com.

Include a return address and daytime phone number. Due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all letters and posts. All published letters and forum comments become the property of *Macworld*.

PUBLISHING PROS MULL OVER THE JUMP TO OS X |

Time to Dive into OS X?

DOUG ROSS

It's been a little more than a year since Apple released Mac OS X. A series of updates have hammered out many of the early kinks and brought improvements to the new operating system's overall performance. And software developers have come out with OS X–native versions of many critical programs—with Adobe Photoshop 7.0 to join the mix soon.

So is it finally time for professional designers, illustrators, and print and Web publishers to use OS X as their default operating system?

For Apple, the question is significant. Graphic designers are a key segment of Mac users. Their willingness—or reluctance—to incorporate OS X into their daily work will have a serious impact on the overall success of the new OS.

All Systems Go?

The print and Web pros we spoke with generally had high praise for OS X. All have experimented with it; some are even using it full-time on their personal machines. But none has made OS X the default system for their professional lives, for reasons ranging from software availability to training.

The promised benefits of OS X—protected memory, preemptive multitasking, advanced memory management, and symmetric multiprocessing—seem ideal for the performance-intensive work of designers. Indeed, those benefits are the ones print and Web pros often cite first when talking about the new OS.

"I like the system stability," says Chuck McKenna, principal of the Web-design firm Macmedia in Urbana, Illinois. "I use so many different programs. In [Mac OS 9], when one application crashes, it usually brings down the whole system, and I have to restart and open six or seven apps again."

Mark Owen-Greene is a former art director who now runs Square Work Consulting, a New York–based firm that specializes in technical training, support, and installation for magazine publishers. He calls OS X a "great computing experience," and he adds that he thinks OS X signals a coming Apple resurgence. "A lot of people are intrigued by the technology coming out of Apple, from OS X to iPhoto," Owen-Greene says.

That's driving professional designers to take OS X out for a test spin—and many like what they see. "I love using OS X," says Eric Nelson, an IT manager with the prepress and print shop Winthrop-Atkins in Middleboro, Massachusetts. "It's fun and fresh. I'm 100 percent OS X at home."

Publish or Perish

But as positive as their personal experiences may be, the designers we spoke with haven't made the final switch to OS X. Several factors are holding them back, with missing or incomplete software providing the largest barrier.

Take Photoshop, a key application for designers. While Adobe has announced an OS X–native version, widespread migration won't happen overnight—especially in these budget-conscious times. Even with Photoshop running on OS X, designers will still need OS X–native plug-ins. Many of those have yet to come out (see "The Wait Is Over," April 2002).

Quark plans to release a native version of its popular QuarkXPress—it just hasn't said when. That's going to hinder people like Patrick Hannagan, an illustrator and textbook designer at HRS Interactive in Peekskill, New York, who relies on XPress and can't switch to a native competitor such as Adobe's InDesign 2. "We need XPress for our complex math textbooks," Hannagan says. "There's a certain math XTension that's essential."

WHAT'S NEXT

The Worldwide Developers Conference—Apple's annual conclave of Mac software makers—convenes on May 6 in San Jose, California. Past events have revealed the latest additions to OS X.

It's not just the usual software suspects that are keeping designers waiting. "I use QuicKeys a lot," McKenna says. "The OS X version doesn't work as well as the OS 9 version. No support for AirPort's software base station is another big drawback. And of course there are the driver issues. A lot of designers have expensive hardware that suddenly wouldn't work if they switched.

"Maybe there are workarounds for all of these," McKenna adds. "But I try to bill seven or eight hours a day. [The] time I take messing around with my machine is money out the door."

Training will also be necessary as the design industry adopts OS X. "People migrating to OS X need structured tutorials so they know where to put things, where to find things," says Owen-Greene. "When someone wants to add more memory to Illustrator 10, for example, you have to be able to explain that that functionality is no longer available or needed with X's memory-management scheme."

Zelda Lin, a Los Angeles–based freelance designer who works on Web, print, and video projects, has been stymied by OS X's unfamiliar interface. Training would help, she concedes, but "it's a matter of finding downtime, which isn't part of my life. Maybe when I'm not under pressure to turn things around quickly, but I can't remember the last time that was."

The Last Word

Even though designers may be taking a cautious approach to integrating OS X into their professional lives, that doesn't mean they're resistant to change. The way McKenna sees it, using OS X is a way to back Apple—especially as support and development of the classic Mac OS peters out.

"It's like when designers made the transition from X-acto knives to the computer," continues McKenna. "People who didn't switch were left behind."—TERRI STONE

Ready or Not?

Here's what creative professionals should consider before choosing Mac OS X as their default OS.

SOFTWARE

> Do the applications I use every day run natively in OS X?
> If so, how well do they perform? If not, how well do they run in OS X's Classic mode?

HARDWARE

> Are there OS X drivers for my printer and other vital peripherals?

SUPPORT SERVICES

> Do my service bureau and printer accept files from the OS X programs I'll use?

TRAINING

> Have I taken the time to familiarize myself with OS X?
> How do I balance my regular workload with OS X training?

WHAT'S KEEPING QUICKTIME 6?

Apple's Fee Fight

When Apple unveiled QuickTime 6 (see "Coming Attraction," *Mac Beat*, April 2002), the biggest surprise wasn't the multimedia technology's full support for MPEG-4, the emerging standard for high-quality streaming video. Rather, it was Apple's decision to delay QuickTime's launch because of a dispute over MPEG-4 licensing terms.

MPEG LA, which handles the royalties for 18 MPEG-4 patent holders, has proposed a royalty structure that would charge companies such as Apple for encoding and decoding MPEG-4 content, as well as for providing streaming content.

Frank Casanova, director of QuickTime product marketing, says that Apple doesn't have an issue with the royalties for encoding and decoding video. "We agree there's value there, and we're willing to pay for it," he says. "What we disagree with are the royalties applied to content providers who want to use the format to stream over the Internet."

MPEG LA proposes a 2-cent-per-hour royalty, on every MPEG-4 stream, for commercial-content providers. "That can add up really fast when you're an AOL Time Warner," Casanova says. Apple fears that this could hinder the adoption of MPEG-4. "The MPEG Licensing Authority should let the streaming of MPEG-4 happen for free, to build the industry better and faster," Casanova adds.

MPEG LA chief technology officer Marina Bosi defends the idea behind the licensing proposal, saying that if content providers make money off of streaming video, then the people involved in developing the streaming format should also get a cut. "Were we pleased that Apple delayed? No, we were not," Bosi says. "But we're learning from the marketplace, and in our mind that's a positive."

MPEG LA's proposed licensing terms are far from set in stone. "The question is, what is the right solution," Bosi says. "We must sort that out so the adoption of the technology is not hindered."

As of press time, Apple was working with content providers and MPEG LA to come to terms on the royalties. "As soon as that comes together, we'll pull the trigger on QuickTime 6," Casanova says.—ANTON LINECKER

IS DDR RAM HEADED FOR THE MAC?

RAM Doubler

The falling price of memory chips forced RAM manufacturers to turn to Double Data Rate (DDR) RAM, which commanded higher prices than PC133 RAM. But now DDR RAM prices have dropped to about what PC133 RAM costs, making DDR RAM a more appealing option for computer makers. If this faster RAM finds its way into your Mac, it could mean a boost in performance.

DDR RAM transmits data on both the rise and the fall of the clock signal (the PC100 or PC133 RAM in your Mac sends data on the rising edge).

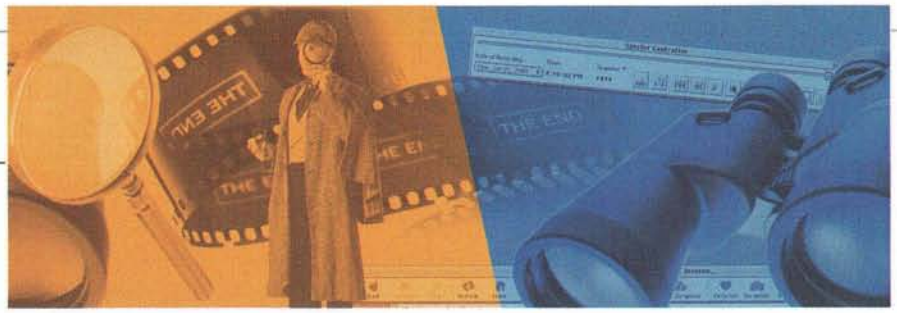
That effectively doubles the bandwidth of the RAM, allowing the processor to stay busier. Adding DDR RAM doesn't improve performance as drastically as, say, doubling the CPU's clock speed. But it does provide a significant benefit.

The Mac doesn't support DDR as its system memory, but you'll find it elsewhere; the Nvidia and the ATI graphics cards that ship in new Macs use DDR. The latest Apollo G4 CPUs also feature 2MB of DDR RAM in their L3 caches.

Top PC and motherboard makers have incorporated DDR RAM systems. Apple declines to comment on plans for future products. But adding DDR to a computer system would be fairly easy to do—Apple would just need to replace its current memory controller with a DDR memory controller and add a couple of DDR RAM sockets. It's something to keep an eye on the next time Apple redesigns its motherboard.—DAVID READ

WEIRD STUFF

Spies Like Us



SpectorSoft (561/770-5670, www.spectorsoft.com) introduced its Spector utility as a tool aimed at helping parents monitor their kids' activity on the family computer. But soon, adults were turning to Spector to confirm suspicions about a partner's cheatin' heart. Once a Windows-only program, Spector—which crouches silently on a hard drive, taking snapshots of on-screen activity for later playback—now lets anyone running Mac OS 8 or later (SpectorSoft is developing a version for OS X) spy on anyone who happens to be using the computer. The $70 utility is both undetectable and invulnerable to being disabled by anyone but the installer, according to SpectorSoft's president, Doug Fowler. But is he bothered by the prospect of selling a product that people can use to spy on one another? Fowler points out that when it comes to indiscretions, sometimes a little invasion of privacy is necessary. "You're going to try and cover your tracks because you don't want to get caught," he says, adding that this doesn't mean that you should install Spector on a computer just because you can. "We encourage the use [of Spector] only in very defined situations." Oddly, it seems that the only people you should spy on are those you trust to use your Mac in the first place.—LISA SCHMEISER

THE READERS SPEAK

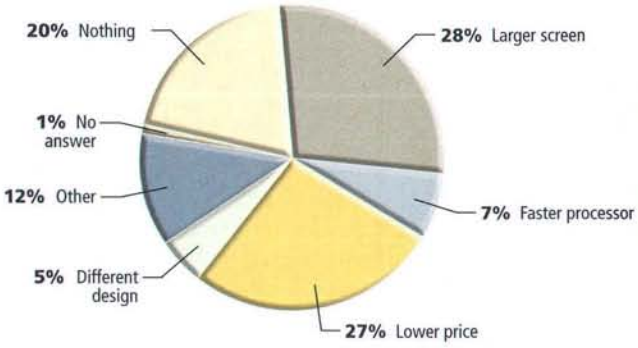
The Redesigned iMac: A Flat-out Winner?

It's been only a few months since Apple took the wraps off its flat-panel, G4-powered iMacs. It will be a while before sales figures become available, but if the *Macworld* readers we talked to are any indication, we can safely say that Apple has another hit on its hands. In a February 2002 survey of 441 *Macworld* subscribers by market-research firm Karlin Associates, 48 percent of the respondents described themselves as potential buyers of the new iMac—they either had one on order or couldn't wait to get one. Another 46 percent didn't think they would buy one but praised the new iMac. Only 6 percent were disappointed in the new machine. Even with its overhauled appearance, the iMac remains an attractive option for novices—at least according to our survey. Nearly two-thirds of the respondents say the new machine is the Mac they'd recommend to first-time computer users. So what changes would the surveyed subscribers make to the new iMac? While a larger LCD screen and lower price were the top choices, Apple can take comfort in a response given by 20 percent of the survey participants: they wouldn't change a thing.—PHILIP MICHAELS

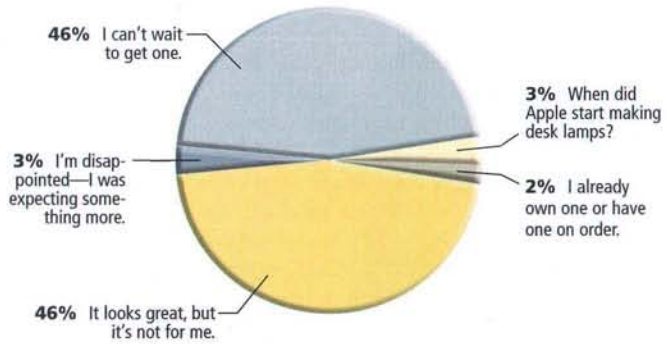
READER SURVEY

If you subscribe to *Macworld* and would like to participate in editorial surveys, visit www.rsch.com/mwpanel to learn about our Subscriber Panel.

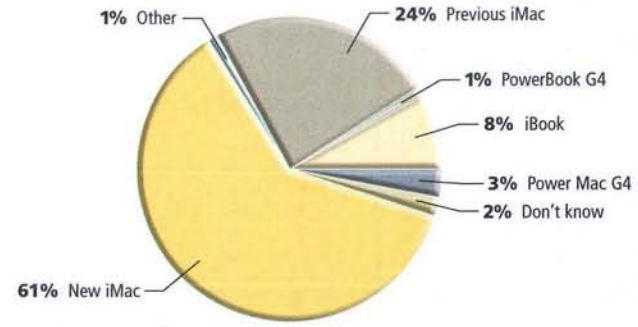
WHAT ONE THING WOULD YOU CHANGE ABOUT THIS iMAC?



WHAT'S YOUR OVERALL REACTION TO THE NEW iMAC?



OF ALL THE MACS AVAILABLE FROM APPLE, WHICH WOULD YOU RECOMMEND FOR A FIRST-TIME COMPUTER USER?



More Info:

www.macworld.com/2002/05/macbeat/poll.html
What else did *Macworld*'s subscribers say about the new iMac? Read the complete results of our survey.

PRO FILE | Q&A WITH PATRICK MARCHESE

TAKING FLIGHT

Like any longtime Mac user, Patrick Marchese is making the adjustment to OS X. But as Markzware's CEO, he can see the transition to the new operating system from another perspective—that of a developer working on native versions of preflighting software and Quark XTensions. *Macworld* spoke to Marchese to get his thoughts on what OS X will mean for print and Web publishers.—ANDREW SHALAT

AT A GLANCE

PATRICK MARCHESE
CEO, Markzware Software
MAC: 550MHz PowerBook G4
SOFTWARE: Qualcomm Eudora, FileMaker Pro, Adobe Photoshop

Is OS X a positive development for publishing?

I think for Web publishing, it's a great positive. And I hope for offset and print publishing, it will be a positive as well. There's going to be a lot of confusion out there with Web designers who are used to designing for the Web trying to convert their knowledge to print. And OS X currently does a lot more for the Web, in terms of PDFs, so we might have a little bit of confusion there. If I know [Apple], it's going to do everything it can to keep with its core constituency—and show how OS X can work for magazines, newspapers, and traditional print media.

Where does PDF support fit into future Markzware products?

PDF is really important, and a lot of people have gotten the wrong impression about Markzware, that we don't comply with PDF files at all. And that's not so. Hopefully, in the future we'll be putting that rumor to rest, because Markzware is focused on PDF files and creating solutions for Acrobat.

So you have something in the works?

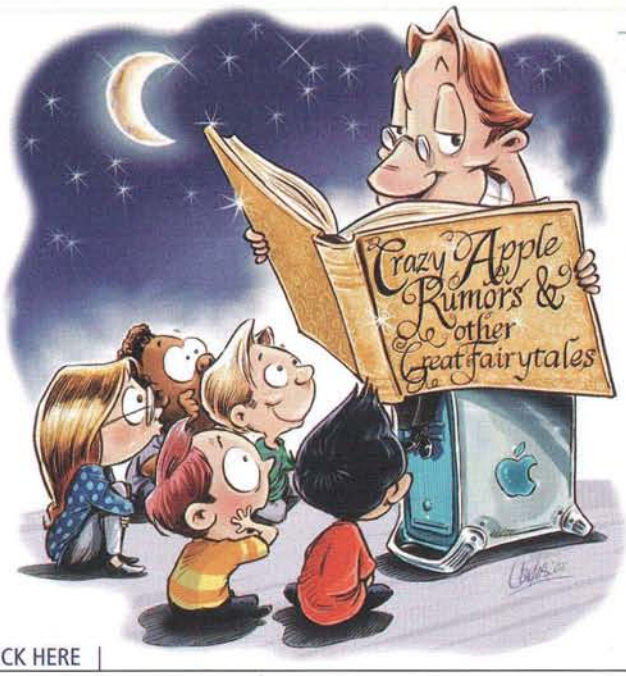
Absolutely. We are definitely going to be creating products in the future for PDFs. You should be hearing about it by the [September 2002] Seybold show, if not sooner. By the way, you mentioned OS X. This is one of my dreams—and I don't know if it will ever come true—but if preflighting could be built into the OS, I think it would be a lot better. Then the applications that are compliant with the OS would have to write their preflighting function calls into a standard preflighting engine.

Are you making an offer here?

Sure! No, well, I'm just thinking that it would make things more compatible for all. Maybe I'm just single-minded, but it would make it easier on a company like ours, where we're reverse-engineering file formats—we could do it from the start. The applications would have to adhere to this standard that would already be built into the OS.

More Info:

www.macworld.com/2002/05/macbeat/marchese.html
In our online interview, Patrick Marchese talks about the history of Markzware and the future of the company's software.



CARLOS CASTENELLOS

CLICK HERE |

Rumor Has It . . .

Not many news Web sites possess the journalistic fortitude to run headlines like "Apple to Speed-Bump Power Mac G4s by 1MHz" or to report that Steve Jobs appeared at last January's Macworld Expo in the buff. But then again, not many news Web sites enjoy the luxury of being able to make up stories. Then there's Crazy Apple Rumors Site—www.CrazyAppleRumors.com—which, in the words of creator and sole contributor John Moltz, "is dedicated to the fabrication of Apple rumors that defy verifiability, grammatical convention, or any basis in reality." Moltz, who started the site last December to feed his writing jones, considers it an affectionate parody of the many Mac rumor outlets. "If Apple's story were told as a Greek drama, the rumor sites would play the part of the Oracle at Delphi," says Moltz, "only the Oracle would be really drunk." Though the humorless may accuse his site of Mac bashing, Moltz is passionate about the platform. He uses Blogger and BBEdit to build and maintain the Web site on a PowerBook G4—one of six Macs he owns. "The great thing about buying a Mac is you're joining a community, and that makes something like Crazy Apple Rumors Site possible," he says. "There are no sites about Dell product rumors. No one cares."—PHILIP MICHAELS

COOL STUFF |

Flash Dance

The Internet is bustling with Flash files, thanks to the animation format's ability to present moving images while using little bandwidth. But if all you want is a bit of fancy text with groovy animated effects—or if you don't have the time to master Macromedia's $499 Flash program—SWfX, from Wildform (www.wildform.com), may be more your style. SWfX lets you animate text and outputs the results as Shockwave Flash files. The $29 program comes with 303 preprogrammed text effects, ranging from Quills, which write cursive text, to more-psychedelic effects named after Hunter S. Thompson and Timothy Leary. You simply select fonts, colors, and looping options; in no time, you've got spinning, sliding, twirling, animated Flash files, without ever having to learn what a vector is, much less how to manipulate one.—MATHEW HONAN

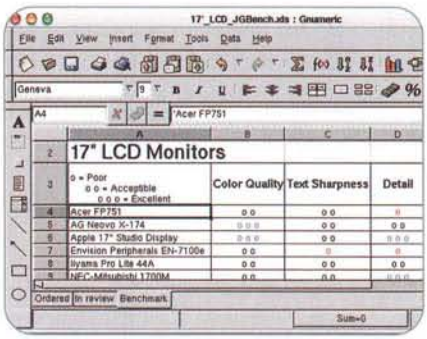
OFFICE POLITICS

How Suite It Is

Microsoft's fully native Office v. X is a compelling reason to switch to Apple's next-generation OS—unless, of course, you don't use Office. So does that mean your options for Mac OS X–native productivity suites are few and far between?

No—and that's not just if you consider longtime options such as AppleWorks. Several new suites that bundle word-processing, spreadsheet, and other applications have debuted on the Mac. That they're coming out at the same time as OS X is not entirely a coincidence.

OpenOSX Office ($30; 760/935-4736, www.openosx.com) includes word processor AbiWord and spreadsheet program Gnumeric. OpenOSX has taken these open-source programs, which run within a Unix-style X Windows interface (shown here) that's not quite Mac-like, and it has added double-click installers for easy installation. Version 1.0 should be shipping by the time you read this.



"The big new thing about Mac OS X that makes our product line possible is the underlying BSD or Unix-type operating system," OpenOSX CEO Jeshua Lacock says.

Then there's ThinkFree, which offers a Web-based software suite. ThinkFree Office 2.0 ($30 for a year's subscription; 408/861-9494, www.thinkfree.com) runs on Mac OS 9 and features word-processing, spreadsheet, and presentation applications, as well as online storage (ThinkFree Office is also available as a $50 CD-ROM). Since ThinkFree is written in Java, it figures to take advantage of OS X's Java2 support when the native version of the suite comes out later this year.

These two suites lack Office's power and some of its functionality. But both cost a fraction of Office's price and take up less hard-drive space.

In addition to suites, look for more stand-alone productivity applications to go native. Nisus Writer, a popular alternative, should be in native form sometime in 2002. An OS X version of Mariner Write is available as a beta; Mariner's spreadsheet application already runs on the new OS. Office may still be the first choice when it's time to take care of business, but the emergence of OS X means there's more than one way for you to work.—PHILIP MICHAELS

PRODUCT WATCH

MAY 2002

Flash Forward

When Macromedia (800/470-7211, www.macromedia.com) updates Flash, it usually alters the interface or adds more productivity-boosting features. With the latest version, it has done plenty of both—and it has given the Web-animation and -authoring tool a new moniker. Flash MX, as it's now known, refines the interface overhaul and scripting capabilities introduced in Flash 5. But Macromedia also touts Flash MX as the first in a series of releases aimed at making it easy to create dynamically generated content for the Web. To that end, Macromedia plans mid-2002 releases for an MX version of Dreamweaver and a set of server products designed to work with the updated Flash. Until then, there's Flash MX, which runs on Mac OS 9.1 and OS X 10.1 (Macromedia has also updated its free Flash Player to run in the new OS). Flash MX sells for $499; existing users can upgrade for $199. Features include:

VIDEO SUPPORT

Flash MX adopts the Sorenson Spark motion-video codec, allowing for the import and streaming playback of video in Flash content. Flash can import any video file supported by QuickTime or Windows Media Player. Video objects can be manipulated just as bitmaps can.

ACTIONSCRIPT ENHANCEMENTS

Additions to the programming language include colored syntax highlighting, code hinting, and an enhanced debugger with support for breakpoints and code stepping. Flash MX also introduces named anchors to bookmark content, letting viewers navigate through Flash content with their browsers' Back and Forward buttons.

PRODUCTIVITY TOOLS

New layer folders in the Flash MX timeline collapse and expand nested layers. A Free Transform feature combines scale, rotation, skew, and distortion in one tool. Pixel Snapping locks objects to exact pixels.

OTHER ADDITIONS

Macromedia continues to tweak the Flash interface, adding Dreamweaver-like touches such as a context-sensitive property inspector. The program now has accessibility tools (their absence has long been a knock against Flash), so disabled users can navigate Flash interfaces.

Hardware

Digital Cameras

Four digital cameras from Canon (800/652-2666, www.usa.canon.com): The **PowerShot A100** ($279) is a 1.2-megapixel camera aimed at entry-level users. The **PowerShot A40** ($399) is a 2-megapixel camera, and the **PowerShot A30** (pricing to be determined) is a 1.2-megapixel model. Both the A30 and the A40 have a 3× optical zoom. The **EOS D60** ($2,999) is a 6.3-megapixel SLR camera with interchangeable lenses.

A 4-megapixel camera from Eastman Kodak (800/235-6325, www.kodak.com): The **Kodak EasyShare DX4900 Zoom** ($399) features a 6× zoom, a combination of the 2× optical zoom with a 3× advanced digital zoom.

Printers

Three printers from Brother (800/276-7746, www.brother.com): The **HL-1850** ($549) features 16MB of installed memory,

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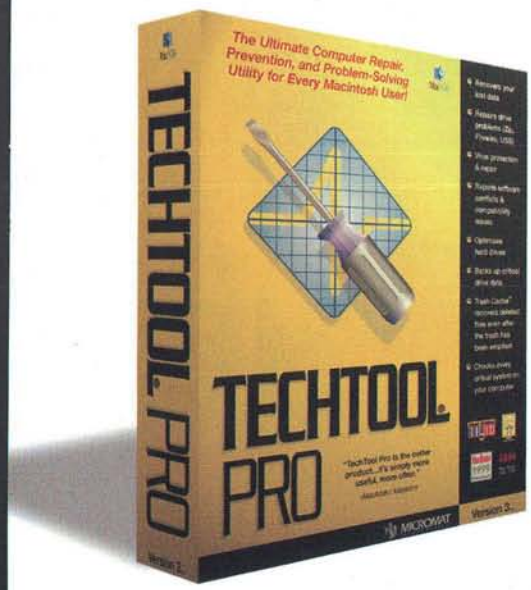
In with the new...



TechTool Pro 3 is the super utility for your Macintosh. Besides repairing and recovering data, TechTool Pro can help you circumvent problems in the first place. Our new virus detect and repair feature, as well as our software conflict check feature, lets you keep your computer in tip-top shape. When booted from the included emergency CD, you can even check, repair and optimize your OS X computer.

Every day, more and more Macintosh professionals are choosing TechTool over other system utilities. In fact, even Apple Computer includes TechTool Deluxe with every copy of their AppleCare™ Protection Plan. Simply put, TechTool Pro 3 is the most complete and powerful troubleshooting utility available for your computer. Why would you settle for anything less?

In with the newer...

For Apple's next-generation operating system, you'll need a next-generation disk utility. That's why Micromat has introduced Drive 10, the first and final disk utility for Mac OS X. Problems with your drive? Drive 10 can repair almost any drive problem with one simple click of your mouse. All within OS X's native environment.

While Drive 10 is a new product, it is derived from TechTool Pro, Micromat's world-class diagnostic and repair utility. Using TechTool's time-tested routines as well as some new routines developed exclusively for OS X, Drive 10 offers many tools for checking and repairing any drive on your system. Don't entrust your OS X drive to ancient utilities. Protect your data and drive safely with Drive 10.

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while the **HL-1870N** ($699) comes with 32MB of memory and built-in networking capabilities. Both laser printers feature a 2,400-by-600-dpi resolution and print speeds as fast as 19 pages per minute. The **HL-4000CN** ($3,199) is a color printer for workgroups. It has a 1,200-by-1,200-dpi resolution and print speeds as fast as 16 pages per minute for color and black-and-white documents.

A dye-sub photo printer and four Bubble Jet photo printers from Canon: The **Card Photo Printer CP-100** ($249) is a 300-dpi dye-sub printer that produces photo prints as large as 4 by 6 inches. The 34-ounce printer can output directly from Canon PowerShot cameras. The **S520 Color Bubble Jet Printer** ($149), the **S750 Color Bubble Jet Printer** ($199), the **S900 Photo Printer** ($399), and the **S9000 Photo Printer** ($499) feature 2,400-by-1,200-dpi resolution.

Storage Devices

A 60GB external FireWire hard drive from EZQuest (714/694-0031, www.ezq.com): The **60GB Cobra Slim FireWire** ($629) operates at 5,400 rpm, and it has a 28MB-per-second transfer rate and a 2MB buffer. The hard drive is bus-powered.

Software

Productivity

FirstEdge, from MYOB (800/851-1315, www.myob.com): The basic bookkeeping product—which runs on OS 8.6 and higher, including OS X—offers accounting and business-management tools aimed at very small companies ($99).

Publishing Software

Atomik 3.0, from Easypress Technologies (www.easypress.com): The QuarkXPress-to-XML conversion software now handles character-level content extraction. It also offers greater control over extracting content from QuarkXPress ($6,995).

Font Reserve 3.0, from DiamondSoft (415/381-3303, www.diamondsoft.com): The font-management utility adds OS X support, as well as management features for multiple font folders and a tool that makes all Font Reserve–activated fonts available to applications running in the Classic environment ($90; upgrade from Font Reserve 2.6 users, free; upgrades from earlier versions, $30).

Portfolio 6, from Extensis (800/796-9798, www.extensis.com): The digital-asset manager offers folder monitoring, database management, thumbnail views, and streamlined cataloging. It runs on OS 8.6 and higher; registered owners of Portfolio 6 will be eligible for a free upgrade to the OS X–native version, which will ship later this year ($200; upgrade, $70 to $130).

Utility Software

Apple Remote Desktop for OS X, from Apple Computer (800/892-7753, www.apple.com): The utility remotely manages Macs on a local network, wireless AirPort network, or across the Internet ($299, 10-user license; $499, unlimited license).

Proteron's **MaxMenus** (402/932-3894, www.proteron.com): The OS X–only utility now has flexible menus that are always available in your display's corners, offering easy access to commonly used applications, files, folders, volumes, and preferences ($30).

Announced

Security

The addition of two utilities to software suites from Symantec (800/441-7234, www.symantec.com): The previously announced **Norton Internet Security 2.0** will include Who's There Firewall Advisor, Norton Personal Firewall, Norton AntiVirus, and iClean. **Norton SystemWorks 2.0** adds DiskWarrior Recovery to a suite including AntiVirus, Norton Utilities, Retrospect Express Backup, and Spring Cleaning.—COMPILED BY PHILIP MICHAELS

Mac OS X Updates

powered by versiontracker.com

Adobe InDesign 2.0 Cross-Media plug-in 2.0
XMedia UI plug-in for InDesign

Apple AirPort X 2.0.2
Software update for AirPort networks

Apple Final Cut Pro 3.0.1
Prevents unexpected quits on DP Macs

Apple Java 1.3.1 Update 1
Improves text, mouse, and printing components in Java 1.3.1 for Mac OS X

Automatic Composition Import FCP Suite 1.1
Imports Final Cut Pro timelines to After Effects

ChronoSync 1.0.1
Autosync and back up files between two computers

Cleaner 5 5.1.1
Streaming-media–authoring tool

Concept Draw 1.7.5
Export-to-PDF added to diagramming app

Corel Graphics Suite 10.01
Improves graphics suite's stability and performance

Crackerjack 4.0
Color-production printing plug-in for Adobe Acrobat

Drive 10 1.0.4
Disk-repair and -maintenance tool

e-CryptIt Engine 6.7
RealBasic add-on for encryption, encoding, and compression

Eudora 5.1b21
Beta of OS X e-mail client

Firewalk X 2.0
Full-featured firewall

FrontBase 3.5
SQL 92–compliant relational-database engine

Keyspan USB adapters 1.0.2
OS X driver for USB serial adapters

MacJournal 2.1
Tool for journals and diaries

MetroShop 4.6
E-commerce business-management software

PhotoToWeb 1.4.2
Manages and creates Web image albums

PowerMail 3.1.2
E-mail client

Synchronize Pro X 1.0
File sync, backup, file-server mirroring

Tenon iTools 6.5.1
Simplifies Apache configuration and maintenance

USB Overdrive X 10.0.0b4
Universal USB driver for any USB mouse or trackball

Yellow Dog Linux 2.1
PowerPC version of the operating system

For these and other current updates, visit:
www.macworld.com/subject/updates

WHAT'S HOT

A Quick Look at the World of Tech

1. **Apple delays release of QuickTime 6.** *Among the company's demands: a change in MPEG-4 video-licensing terms and the removal of Jar Jar Binks from the next* Star Wars *movie.*

2. **Apple wins a Grammy award for outstanding technical contributions to the music industry.** *With Emmy and Grammy awards now in hand, Apple plans to ratchet up a PR campaign to take home next year's Heisman Trophy.*

3. **Adobe unveils Photoshop 7, which runs in OS X.** *Meanwhile, from their Denver headquarters, Quark executives are heard to mumble nervously, "What is everyone looking at us for?"*

MAC STUFF

Going Around in Circles

A 360-degree panoramic image can add depth to your Web site—and hours to your workload if you're using software to stitch together multiple shots taken by a digital camera. But two companies offer digital-camera attachments that let you create a panoramic scene without a lot of fuss. Kaidan's 360 One VR (215/364-1778, www.kaidan.com) and VR Interactive's SurroundPhoto from Sunpak—which is distributed in the United States by Tocad America (973/428-9800, www.tocad.com)—are mirrored reflectors that attach to your digital camera, capturing a 360-degree view in a single shot. Both attachments come with software that converts images; 360 One VR's EyeSee360 PhotoWrap program runs on OS 9 and OS X, while the SurroundPhoto program runs on OS 8.5 and later, with an OS X–native version in the works. The 360 One VR sells for $1,000. The $250 SurroundPhoto saves images with a watermark—removing it from the scenes you want to keep costs $7 (a $699 pro version of the program lets you process unlimited images). Either attachment makes the time-intensive process of stitching together a panoramic view a snap.—PHILIP MICHAELS

The SurroundPhoto from Sunpak

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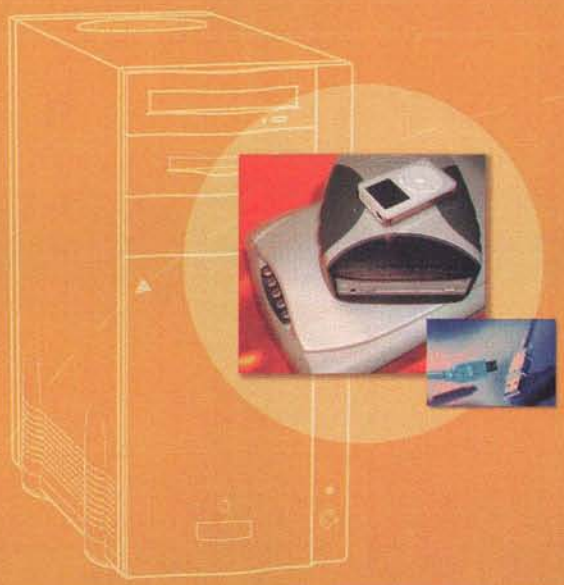

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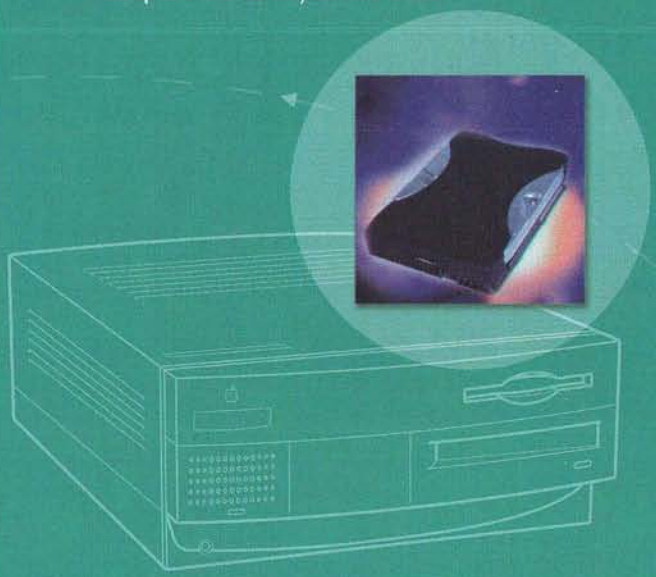

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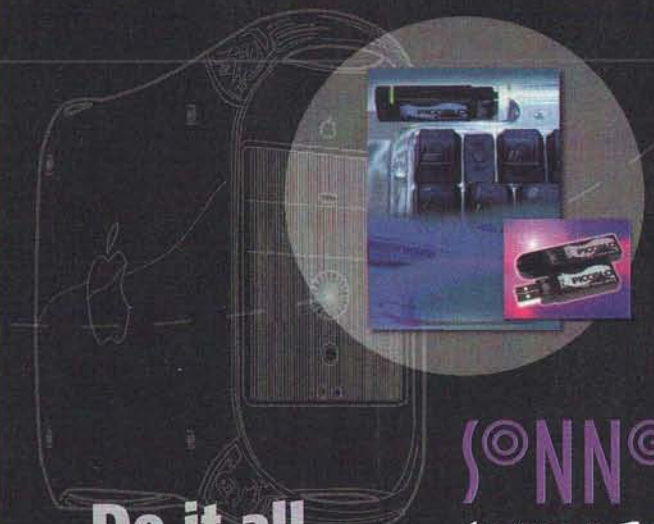

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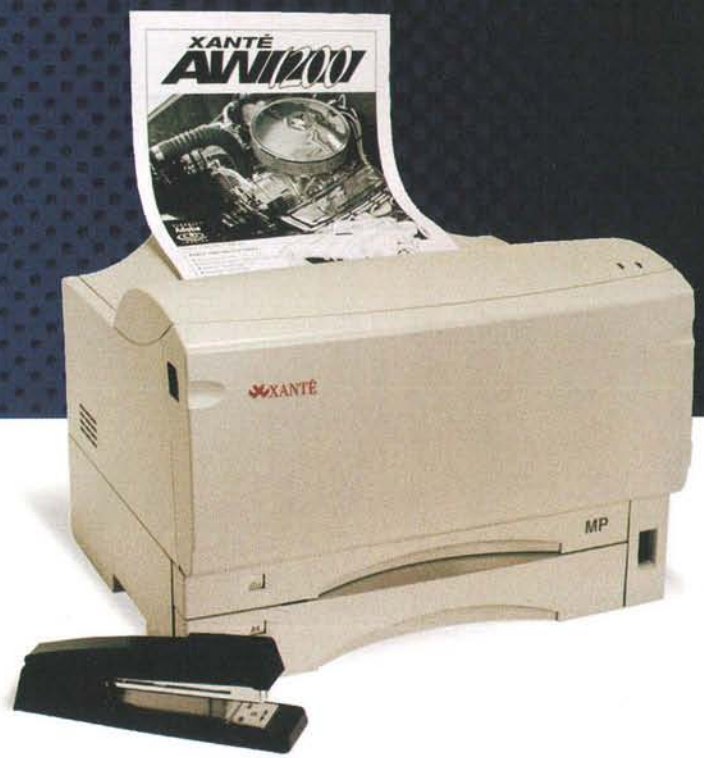

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FINAL CUT PRO 3

Solid Update Adds Mac OS X Compatibility, Limited Real-Time Effects

BY JIM HEID

In Hollywood, when a studio has a hit, it quickly releases a sequel. Apple has fittingly adopted this strategy for Final Cut Pro, its professional video-editing software. Within nine months of shipping Final Cut Pro 2, Apple delivered version 3, an impressive update that adds real-time effects, new color-correction and -measurement tools, and expanded editing features.

Perhaps most significant, Final Cut Pro 3 is Mac OS X native—although OS X introduces important compatibility and workflow issues. Version 3 also has some minor bugs, but it should prove to be as big a hit as its predecessors.

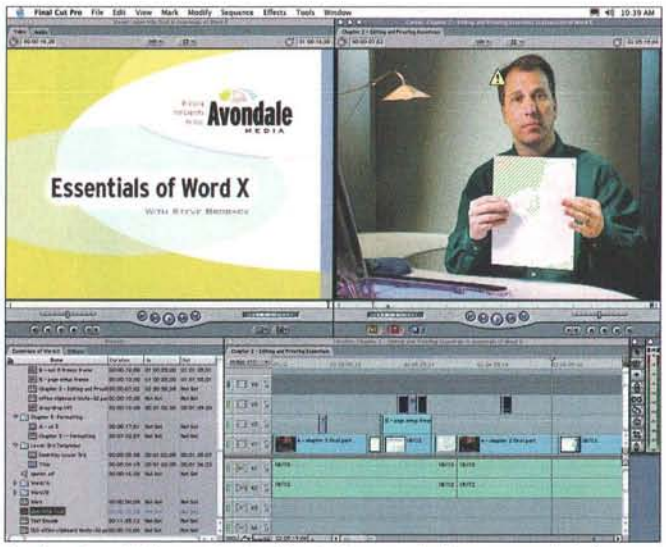
Editing Under Aqua

Final Cut Pro 3 looks and works nearly identically to earlier versions. Apple has wisely resisted the urge to tinker with a successful user interface that thousands of video pros have mastered.

Running in Mac OS X, Final Cut Pro's interface looks muted and restrained compared with that of many OS X programs. This is critical for professional video work, where rainbow-colored toolbar icons and animated gewgaws would become visually fatiguing.

We used Final Cut Pro 3 to edit a 90-minute training DVD, running the program almost exclusively in Mac OS X, with excellent results. Final Cut Pro unexpectedly quit a couple of times, but we were always able to relaunch the program and continue without having to reboot.

We did encounter a couple of glitches in Final Cut Pro while it was running in OS X. For example, it would occasionally display video incorrectly if the monitor had gone to sleep due to inactivity—quitting and relaunching the program fixed this. Other users have reported problems with batch-capturing video while running Final Cut Pro 3 in OS X, but we didn't have any such trouble.



Staying Legal When active, Final Cut Pro's range-checking commands indicate areas that approach or exceed broadcast-safe levels—as shown here by the diagonal zebra stripes on the white sheet of paper.

To X or Not to X

Final Cut Pro 3 also runs in Mac OS 9 (specifically, OS 9.2.2). There are reasons why you might want to stick with the older OS, at least for a while. Final Cut Pro can use many filters and effects plug-ins written for Adobe After Effects, but third-party vendors will need to rewrite plug-ins to run in Final Cut Pro 3 in OS X. If your projects depend on an After Effects plug-in that hasn't been updated for OS X, you'll need to run Final Cut Pro 3 in OS 9. This also applies to video-capture cards whose driver software has not yet been updated for OS X.

Editing teams who collaborate on projects might also want to approach OS X with caution. Mac OS X's multiuser design introduces new workflow issues—in some circumstances, you have to futz with OS X's privileges settings in order for each member of a team to be able to access a file or folder. Learning how to do this isn't difficult, but it isn't something you'll want to do in the middle of a project.

Fortunately, one issue that won't affect your OS decision is performance: Final Cut Pro is just as fast and responsive in OS X as it is in OS 9.

Effects Get (Kind of) Real

For many users, the best part of Final Cut Pro 3 is its ability to display many common video transitions and effects immediately, without the need for rendering. For example, you can add a cross-dissolve between two clips and see it right away—there's no need to choose the Render command and twiddle your thumbs.

When it comes to transitions, Final Cut Pro 3 provides real-time display of cross-dissolves, fades, irises, and several flavors of wipes. A few filters also work in real time, as do some motion effects. You can also combine real-time effects, although on slower G4 systems Final Cut Pro may be unable to render them in real time. It goes without saying that dual-processor G4 systems deliver the best real-time performance.

But there are some strings attached. For starters, Apple recommends that you have a beefy Mac: a 500MHz or faster G4 with at least 384MB of memory, or, for mobile editing, a 667MHz Titanium PowerBook G4 with the same amount of RAM. What's more, Final Cut Pro's real-time mode is disabled if you configure the program to display video through a connected FireWire device—a common method of working. Nor can Final Cut Pro 3 perform real-time operations using content stored in formats other than DV or OfflineRT. And finally, in all circumstances, you must still render all effects and transitions before outputting your project to tape.

Final Cut Pro's real-time mode isn't quite as real as many editors might like. Still, anything that reduces the need for rendering during the editing process is welcome—and editors who need more-robust real-time operation can turn to third-party cards such as the Matrox RTMac. (As of this writing, however, the RTMac was not compatible with Final Cut Pro 3 running in OS X, and Matrox had not announced when OS X drivers would be available.)

Correcting Color

Two new features help ensure that your video is broadcast-legal—

28 **Video-editing software**
Final Cut Pro 3

29 **Motion-graphics application**
After Effects 5.5

31 **Color-management tools**
GretagMacbeth Eye-One Pro with Eye-One Match

32 **3-D–authoring tools for the Web**
Axel 1.5

33 **Image-processing application**
DeBabelizer Pro 5

35 **FireWire CPU-upgrade card for iMac**
Sonnet Technologies Harmoni G3

36 **5-megapixel prosumer camera**
Nikon Coolpix 5000

37 **5-megapixel professional camera**
Olympus E20N

37 **Backup utility**
Backup Toolkit 3.0.5

38 **Music-visualization program**
Onadime Composer 1.4

39 **Fax software**
Faxstf X

41 **CD/DVD-burning software**
Discribe 5.0

40 Keller on Cameras
Macworld's new digital-imaging column debuts with a review of four 4-megapixel cameras: the Canon PowerShot G2, Canon PowerShot S40, Olympus C-4040 Zoom, and Olympus D-40 Zoom.

OUTSTANDING: ♦♦♦♦♦ VERY GOOD: ♦♦♦♦ GOOD: ♦♦♦ FLAWED: ♦♦ UNACCEPTABLE: ♦

that its colors and brightness are within industry guidelines. With the new range-checking commands, you can have Final Cut Pro display "zebra stripes" on areas of an image that exceed broadcast-safe values (see "Staying Legal"). If a scene is outside legal limits, you can quickly correct it using the new Broadcast Safe filter.

For more-advanced color tasks, such as removing the greenish tint of fluorescent lighting, there are new color filters and monitoring tools. A new Tool Bench window displays several kinds of video scopes, which are useful for analyzing the color and brightness of a clip. New color-correction filters provide exceptional control over color balance and brightness. The new Color Corrector 3-Way filter even works in real time on Macs meeting Final Cut Pro's real-time requirements.

New Ways to Work

The rest of Final Cut Pro 3's enhancements are a grab bag of useful additions. The new OfflineRT storage format enables you to store roughly 40 minutes of video per gigabyte—about nine times the normal amount of DV footage—for editing and previewing. OfflineRT is a refined version of a technique that experienced Final Cut Pro editors have been using for some time. It's particularly well suited to working on the road: you can use the OfflineRT format to edit a project on your PowerBook, then create its full-resolution version when you return to the studio.

With the slick new Autosave Vault, you can easily revert to a previous version of a project. And not just one version—Final Cut Pro makes a backup of your project every 30 minutes and maintains a list of 40 backups. You can experiment with abandon, safe in the knowledge that previous versions are only a couple of clicks away.

Final Cut Pro includes a terrific new text generator—Boris Calligraphy, from Boris FX. Final Cut Pro 2 included a Boris-based titler, too, but Calligraphy is more tightly integrated into Final Cut Pro 3 and has far more features, including 3-D animation. For previewing animated titles and composites, there's a new QuickView window, which displays RAM-based previews.

Surveying the Competition

Final Cut Pro has no real competition on the Mac. Adobe Premiere is a fine program, but its capabilities pale in comparison, and it's not yet OS X native.

Competition could be on the horizon, however. This summer, Avid Technology plans to ship version 3 of its Avid Xpress DV software, which has been available for Windows for some time. A high-end package, Avid Xpress DV will go head-to-head with Final Cut Pro. It will also cost $1,699—nearly twice as much as Final Cut Pro.

When Xpress DV ships for the Mac, Final Cut Pro may well have serious competition—assuming Avid will produce a program that's as fast, as reliable, and as well integrated into Mac OS as Final Cut Pro, and assuming Apple won't leapfrog ahead with yet another Final Cut Pro sequel. Those are big assumptions, and we'll have to wait and see.

Macworld's Buying Advice

Final Cut Pro 3's real-time effects features streamline the editing workflow, even if they do have limitations. The program also packs the most complete array of color-monitoring and color-correction tools available in a software-only video-editing package. And Apple's wise decision to retain OS 9 compatibility gives video pros more time to transition to Mac OS X. Final Cut Pro 3 is a first-rate sequel, and the only choice for day-in and day-out video production. □

RATING: ♦♦♦♦
PROS: Exceptionally capable, efficient interface; real-time effects; powerful color-correction filters; many helpful workflow improvements.
CONS: Some minor bugs, particularly in OS X; real-time effects unavailable when previewing to FireWire device.
PRICE: $999; upgrade from Final Cut Pro 2, $299
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Apple Computer, 800/692-7753, www.apple.com

AFTER EFFECTS 5.5

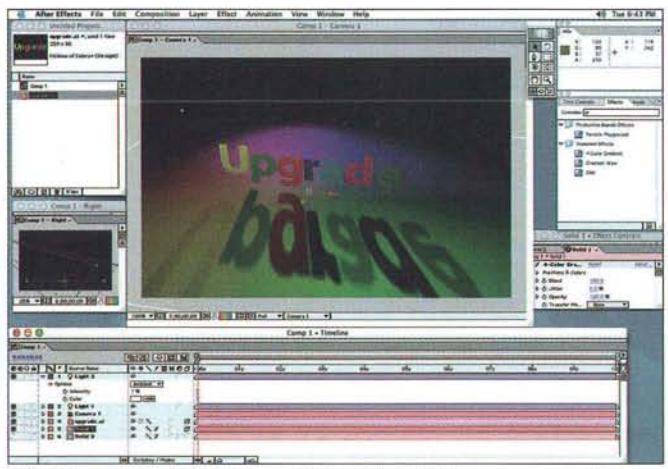
Surprisingly Significant Update Shows that If It Ain't Broke, You Should Fix It Anyway

BY BEN LONG

After Effects 5.0 (♦♦♦♦; *Reviews*, August 2001) took Adobe's high-end motion-graphics program to a new level by adding 3-D animation capabilities. In addition, version 5.0 added lighting and camera controls usually found only in 3-D animation programs. So it's surprising to see how much Adobe managed to fix, tweak, and add to the program, producing After Effects 5.5—an important upgrade that also offers OS X compatibility and a slew of workflow improvements.

Transmissions and Intersections

After Effects' interface and workflow remain largely unchanged: you import media into the Project window and then place those media elements into a Composition window where they can be animated and manipulated. After Effects' great strengths have always been its ability to animate every characteristic and property of a piece of media, as well as its excellent timeline controls. In addition to animating the camera (your viewpoint) and lights, you can also animate your composi- >>



Why, It's a Compositing Program! After Effects 5.5 lets you open multiple views of a composition, making it easier to position 3-D objects, which can now cast colored shadows.

tion's layers to create elements that move and spin in 3-D space.

Version 5.5 augments After Effects' 3-D capabilities with a number of important improvements. Version 5.0 had a well-known inability to correctly render the intersections of different 3-D objects. This problem has been fixed in After Effects 5.5, and objects now intersect without incorrectly obscuring each other.

The most impressive 3-D feature is the new Light Transmission property, which lets layers cast colored shadows onto other layers. Light transmission means that when light passes through a semitransparent object, it takes on the color of that object. This allows you to create more-realistic renderings, as well as effects such as stained-glass windows.

Any layer can now be designated as a shadow caster, meaning the layer itself is not visible in your scene, but its shadow is. Combining shadow casters with light transmission means you can create complex virtual lighting gels for building more-sophisticated lighting setups. High-end 3-D users will be pleased to learn that After Effects 5.5 can import Maya camera data, meaning that you can match After Effects' 3-D camera to a camera move scripted in Maya. This facility means you can accurately rotoscope and render scenes that contain complex camera moves into Maya.

Interface Changes

In After Effects 5.5, you can open separate windows with different views of the same composition, which makes positioning objects in 3-D space and navigating your scene much easier than in previous iterations. You can also save your view configurations, and Adobe has added a number of presets, including a four-view setup that will feel familiar to users of 3-D programs.

The new Effects palette makes it easier to find and apply effects. Effects can be listed and sorted in a number of ways and can even replicate the organization of your After Effects plug-ins folder. A lightning-fast search facility lets you quickly find your desired effect by typing the first few letters of its name. To apply effects, you just drag them into your composition from the Effects palette.

The program's new Post Render options provide a lot of handy new workflow shortcuts. For example, you can drag media elements from the Project window directly into the Render Queue window. After Effects will automatically create a separate composition for each element, add it to the render queue, and, after rendering, add the results to your project.

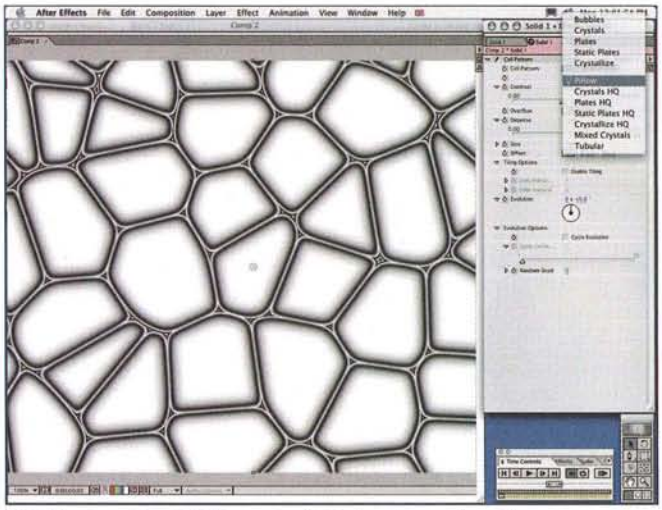
Post Render options also offer a way to create low-resolution proxy media—a lower-resolution rendering of your current footage or composition. Because it's smaller than your original media, it renders and displays faster, making After Effects' environment much snappier and easier to work with. When you're ready to render your final output, After Effects can replace your low-resolution proxies with full-resolution renderings. Though the interface is a little cumbersome, the ability to easily create and manage proxy rendering is a boon to users who create large, complex projects that require high-definition media.

New Effects

As always, there are two editions of After Effects 5.5: the $649 Standard, and the $1,499 Production Bundle, which includes an additional set of high-end plug-ins. A number of powerful new effects filters are included with both versions of After Effects 5.5, though the Production Bundle offers more. After Effects 5.5 would be a valuable upgrade even without the addition of any effects filters, so Adobe's inclusion of such cool ones feels like a bonus.

The new Color Stabilizer filter provides a simple way to correct color changes in a clip that suffers from variations in exposure. After applying the filter, you simply click on a white point and a black point in the image, and the filter takes care of the rest.

Other new plug-ins include automatic, animatable grid generation, a four-color gradient generator, and a powerful new lightning plug-in.



Cell Structure The Cell filter creates intricate cellular patterns. The one shown here is Pillow with Overflow set to Wrap Back, creating the tortoiseshell pattern.

What's Broken

But the addition of cool new effects doesn't mask After Effects' weaknesses. Though it's a top-of-the-line compositing tool, After Effects still lacks state-of-the-art rotoscoping tools. And though version 5.0 added some great vector painting tools, they're no substitute for the real brushes, paints, and rubber-stamp tools that you can find in a more powerful rotoscoping application. After Effects' motion-tracking features—another rotoscoping mainstay—are also showing their age and pale in comparison to those of competing products such as Pinnacle's Commotion 4.

The X Factor

After Effects 5.5 is OS X native, and the CD installs After Effects for either OS 9 or OS X. In our tests, After Effects ran equally well in both OS 9 and OS X, although in two tests the program ran faster in OS X.

OS X provides some other advantages as well. Screen redraw is sometimes faster under OS X, and OS X's more-advanced memory management means that After Effects' RAM previews will automatically use all the memory it can find.

On the downside, all After Effects plug-ins must be rewritten to work in OS X. So if you have a large plug-in collection, you'll have to reboot into OS 9 to apply and render your filter effects there using the OS 9 version of After Effects. Hopefully, vendors will update their plug-ins for use with OS X, but for currently unsupported packages, the OS X future looks grim.

Macworld's Buying Advice

Adobe has done well with After Effects 5.5. The new 3-D effects and huge assortment of interface changes make this an obvious choice for regular After Effects users. OS X users should also be pleased with the program's introduction to this OS, if a little leery of the program's lack of plug-in compatibility. After Effects is still weak in the rotoscoping department, but if you design motion graphics for film, video, or the Web, the program remains an excellent choice for compositing and special effects. □

RATING: ♦♦♦♦

PROS: Improvements to 3-D facility; workflow enhancements; cool effects.

CONS: Some interface elements are a little cumbersome; lacks good rotoscoping and motion-tracking tools.

PRICE: Standard, $649; Production Bundle, $1,499; upgrade from version 5.0, $100

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Adobe Systems, 800/833-6687, www.adobe.com

EYE-ONE PRO WITH EYE-ONE MATCH

GretagMacbeth Provides Easy-to-Use Color-Management Tools

BY BRUCE FRASER

Color management is a wonderful technology for keeping your color consistent across different devices—monitors, scanners, and printers—but its success depends on the accuracy of the ColorSync profiles you use to describe these devices. Color giant GretagMacbeth has long been known for making industrial-strength color instrumentation and software (with industrial-strength price tags to match). Its new spectrophotometer-based Eye-One products may not be inexpensive, but they offer color-measurement and device-profiling capabilities at a cost mere mortals can afford, and you don't need a Ph.D. in color science to get great results with them.

The top-of-the-line offering we reviewed has the ungainly moniker Eye-One Pro with Eye-One Match. The $2,800 package comprises the Eye-One Pro, a spectrophotometer capable of measuring emissive (monitor) color and reflective color (ink, toner wax, and so forth, on paper), and Eye-One Match, an OS X–native program that lets you create profiles for scanners, monitors, and just about any hard-copy output device, from a desktop ink-jet to a gravure press.

There are two other Eye-One flavors: the $600 Eye-One Monitor, which deals solely with monitor color, using an emmissive-only spectrophotometer, and the $1,500 Eye-One Pro, which includes the same spectrophotometer as the high-end package but won't let you build output profiles.

The Eye-One Pro

The Eye-One Pro spectrophotometer is a nifty little device. It includes adapters for mounting to CRT or LCD monitors, and a transparent plastic guide for measuring reflective targets in scan mode. You can use the instrument to take spot readings simply by lining up the measurement aperture on the sample and pressing the measure button, but its scan mode is really the standout feature.

Most of the work in building printer profiles is in measuring a large number of color patches (the Eye-One Match printer targets use 288 patches for RGB and 323 for CMYK). With most handheld spectrophotometers, this is an agonizing exercise—align the instrument on the sample, press the measure button, move to the next sample, press the button, repeat another 286 times—but Eye-One Pro's scan mode makes it almost painless. You align the plastic rule to the row of patches you want to measure, place the instrument in the guide slot, press and hold the measure button, and wait for a beep. Once you hear the beep, you simply drag the instrument across the row, using the plastic rule as a guide, while holding down the measure button; then you release the button when you get to the end. You can measure an entire row in three or four seconds and measure the entire target in a couple of minutes.

The only downside to the Eye-One Pro is that its scan mode works only with targets designed for it—the instrument not only needs patches of a specific size, but also needs each patch to be sufficiently (that is, a lot) different from the preceding one so that it can distinguish one patch from the next. But this isn't a major problem: the RGB and CMYK targets that come with Eye-One Match work well, and third-party profiling packages are slowly starting to produce targets that the Eye-One Pro can scan.

We found that the Eye-One was stable and accurate on both emissive and reflective measurements. In fact, it produced results that were almost identical to those of GretagMacbeth's more expensive Spectrolino.

A Sharp Eye The wizard-based Eye-One Match software cheerfully violates most user-interface guidelines but makes it easy to use the Eye-One Pro device to create color profiles.

Eye-One Match

Eye-One Match's opening screen asks you to pick which kind of device—monitor, scanner, or printer—you want to profile; it then prompts you to calibrate your Eye-One device.

We quickly got into the habit of keeping the Eye-One resting on the separate base plate that contains the white calibration tile, because that way the Eye-One automatically calibrates itself and advances you to the next screen. If the instrument isn't on the white tile, you get an error message that directs you to place it there and click on the measure button.

The subsequent screens step you through the process of profiling your selected device. The application guides you through making the necessary measurements and then produces a profile. The only decisions that you have to make are your monitor white point (5,000K, 6,500K, or 9,300K) and gamma (1.8 or 2.2), for monitors; whether to use the included reflective scanner target or an IT8, for scanners; and for printers, the type of printer you're dealing with. The profiles Eye-One Match produces are identical to profiles made with GretagMacbeth's industrial-strength profiling tool, ProfileMaker Pro, at the latter's default settings. You don't get control over black generation or ink limits on CMYK profiles, but the default settings are the product of a great deal of research and experience, and they work well.

In fact, the only real problem we encountered isn't GretagMacbeth's fault. Monitors calibrated using OS X 10.1.2 on Macs that use Nvidia video cards may develop a little shadowed box that follows the cursor around, although restarting the Mac sometimes makes it disappear. Sources at Apple indicated that a fix should appear shortly.

Macworld's Buying Advice

If you want to enter the world of printer-profile creation, Eye-One Pro with Eye-One Match will give you top-notch results in a relatively short amount of time. If you absolutely must have control over black generation and ink limiting, you'll need a more complex software package than Eye-One Match. However, long after you've graduated to software with fuller features, you'll still find the Eye-One instrument indispensable. □

RATING: ♦♦♦♦

PROS: High-quality, flexible instrument; easy-to-use wizard-based software.

CONS: Idiosyncratic user interface; no control over black generation and ink limits for CMYK profiles.

PRICE: $2,800

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: GretagMacbeth, 845/565-7660, www.i1color.com

AXEL 1.5

Basic Package Simplifies the Creation of 3-D Interactivity for the Web

BY MATTHEW LOWRIE

As interactive 3-D Web graphics progress beyond the pioneering efforts of VRML, and as new Web-design software simplifies the authoring process, Web designers and 3-D artists—who want to showcase interactive 3-D scenes via a Web browser, for example—need a straightforward way to bridge the gap between their areas of expertise.

MindAvenue meets this challenge—the company has released two editions of Axel 1.5, the only OS X–native 3-D authoring tools for the Web (they also run on OS 9): Axelcore 1.5, geared toward Web designers with little or no 3-D experience, and Axeledge 1.5, which builds on Axelcore's foundation with a few advanced features for 3-D artists.

3-D Tools Anyone Can Use

Axel 1.5 provides basic, well-designed polygon tools intuitive enough for artists unaccustomed to working with 3-D. You can draw and edit curves using a standard pen tool; however, it lets you create only corner points (this is limiting if you are used to Bézier curves or control vertices). With a single menu selection, you then create 3-D surfaces by revolving or extruding curves. You make changes to surface attributes via a palette that describes the objects' parameters; the program simultaneously updates layout views, giving you WYSIWYG control over 3-D models.

Axel includes a library of primitive shapes, as well as a text tool for generating extruded 3-D type from TrueType or PostScript fonts. Text options allow for embedding font outlines in Web files and converting characters to curves, ensuring that your text appears the same on any platform.

Artists uncomfortable with the technical aspects of 3-D modeling, or those who need to generate concepts quickly, will be pleased with the vertex push/pull tool, a handy feature that works as a virtual sculptor.

Axel doesn't support any proprietary 3-D file formats, but it does support VRML 97 (and MindAvenue says that a LightWave importer will be available in Axeledge and for download by the time you read this).

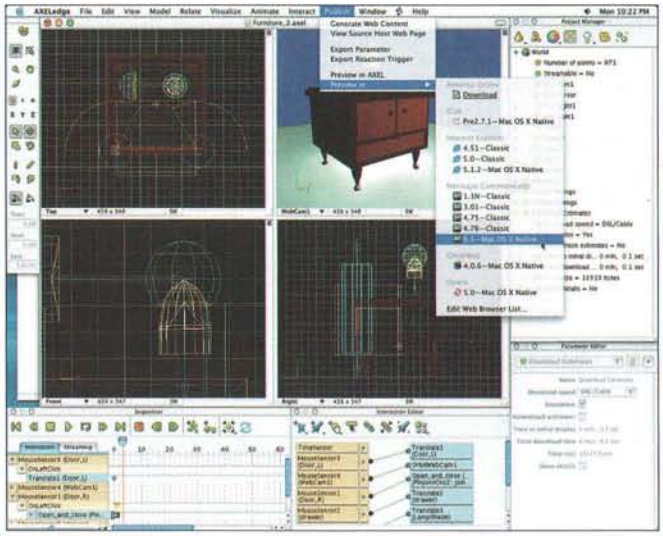
Putting It in Motion

Axel's motion tools will be familiar to content developers who compose keyframe animations in programs such as Adobe LiveMotion and Macromedia Flash. There is also a Record mode, which automatically generates keyframes when you move objects around in the layout views. It's easy to use, but it creates a jumble of keyframes that needlessly bloats your Web file size.

But Axel provides tools that present interactivity clearly: *sensors* handle all the ways a user can manipulate an object, such as mouse clicks, rollovers, and keyboard entries; each sensor's *reactions* trigger a response, such as changing an object's parameters or playing an animation, sound, or movie. The Interaction Editor window displays a visual schematic of all a scene's sensor-reaction relationships, and you can edit each relationship easily by dragging connection handles between objects.

Pulling It Together

All the work that goes into creating 3-D Web content is pointless unless there's an easy way to publish it, and Axel provides one. When you save your entire 3-D scene as an Axel stream file (with an *.axs* extension), the program automatically exports the correct HTML code to a new or existing HTML page. The Axel software can also write the code necessary for rendering windowless 3-D content. This is ideal for creating a Web site with a virtual human guide, for example. A 3-D animator can work on the character and then save it to render as a windowless element in an HTML layout.



Browsing for Browsers Axel 1.5 creates a custom menu of all installed browsers, making it easy to preview Web content right from the interface.

For a site visitor, watching the final scene in a browser requires downloading the free, 700K Axel Player plug-in. The plug-in supports a wide range of browsers available for both the Mac and PCs, including the latest OS X versions of Internet Explorer, Netscape 6, iCab, and OmniWeb, as well as Opera and AOL for OS 9.2. However, the added step of manually installing a player is inconvenient.

A Download Estimate Manager gives the approximate transfer times of your final file, at various connection speeds. Previewing in browsers is also convenient. Axel generates a customizable menu after scanning your hard drive for all installed versions of supported browsers. Selecting one from the menu launches the browser automatically and plays the Web file as the site visitor will see it.

A Choice of Features

While both Axel editions are essentially the same product, they're geared toward different audiences. Axelcore 1.5 is a great introductory 3-D tool for Web designers looking to add pizzazz to their sites, whereas Axeledge 1.5 offers experienced 3-D artists additional character-animation and scripting tools like those in NewTek's LightWave 3D (see *Reviews*, April 2002). The scripting language is comparable to JavaScript, but with an interface for piecing together scripts from menus of functions and operators.

The higher-end Axeledge's character-animation tools offer forward and inverse kinematics, but only for a maximum of two bones, forcing you to animate longer bone hierarchies (for example, those in a snake or a tree limb) with the more time-consuming forward kinematics.

Macworld's Buying Advice

For 3-D artists seeking a new medium, and for Web-content developers looking to expand their repertoire, Axel offers an intuitive interface for creating interactivity. □

RATING: ♦♦♦♦

PROS: Easy-to-learn, intuitive interface for complex operations; full creation-to-publishing workflow; wide-reaching browser support.

CONS: Lack of support for 3-D file formats; installing browser plug-in inconvenient for site visitors.

PRICE: Axelcore, $395; Axeledge, $950

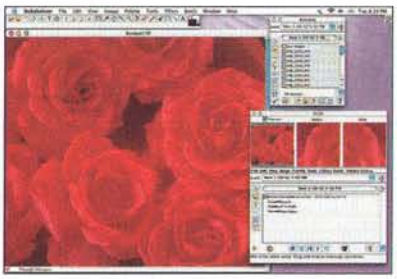
OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: MindAvenue, 866/646-3283, www.mindavenue.com

DEBABELIZER PRO 5

Old Image-Processing Favorite Returns to the Mac

Equilibrium's DeBabelizer was once the most essential utility—hands-down—for anyone who worked with digital images. Soon after the company released version 3, it abandoned the Mac, but now DeBabelizer is back as DeBabelizer Pro 5, a major upgrade that delivers loads of new features, a greatly improved interface, and full OS X compatibility. Many other graphics apps have added automatic image processing, but none have DeBabelizer's power, making it once again a must-have graphics utility.



Rosy Upgrade Though it's still a bit cumbersome, DeBabelizer Pro 5's interface is an improvement on that of previous versions.

Script to Your Heart's Content

DeBabelizer provides several methods of creating and executing scripts. The New Script command creates an empty script window, to which you can add steps by choosing desired operations and commands. Or you can use the Watch Me command to record actions, à la Adobe Photoshop's Actions palette.

You can trigger scripts by dragging and dropping images from the Finder onto designated icons in DeBabelizer, or by using the program's Batch feature to create and manage a queue of images. You can also create special folders in the Finder that have associated scripts. Drop files in these hot folders, and DeBabelizer will process the images using the appropriate script. This lets you create network-based, automatic image-processing workflows.

DeBabelizer's scripting facility surpasses the simple "list of actions" scriptability you'll find in Photoshop's Actions palette. DeBabelizer scripts can include loops, delays, conditionals, and display options that make for flexible batch processing. For example, you can build scripts that perform different actions depending on an image parameter, such as size, making it possible to build one script that can process a wide variety of source images.

DeBabelizer can also export your scripts as standard AppleScript files, though depending on how you intend to use them, they might need some minor editing. Our main criticism is that DeBabelizer cannot read the EXIF (Exchangeable Image File) header information in a digital-camera file. Also disappointing is the program's inability to process digital photos based on their exposure settings and other parameters.

Early versions of DeBabelizer were notorious for their impenetrable interfaces. Version 5's interface is nearly identical to that of DeBabelizer 4 for Windows; it's much better than it used to be but still a little cumbersome. Expect DeBabelizer's huge array of windows and palettes to take up a lot of screen real estate.

Image Wizardry

The most-powerful tools in DeBabelizer are its palette-manipulation controls. SuperPalette, a DeBabelizer mainstay since the first version, can automatically analyze a group of images and create a single 8-bit palette that's optimized for the entire batch. You can also specify that certain colors—such as those of interface elements—be preserved when images are processed. And SuperPalette can now automatically download all of a site's images for analysis and automatic palette creation.

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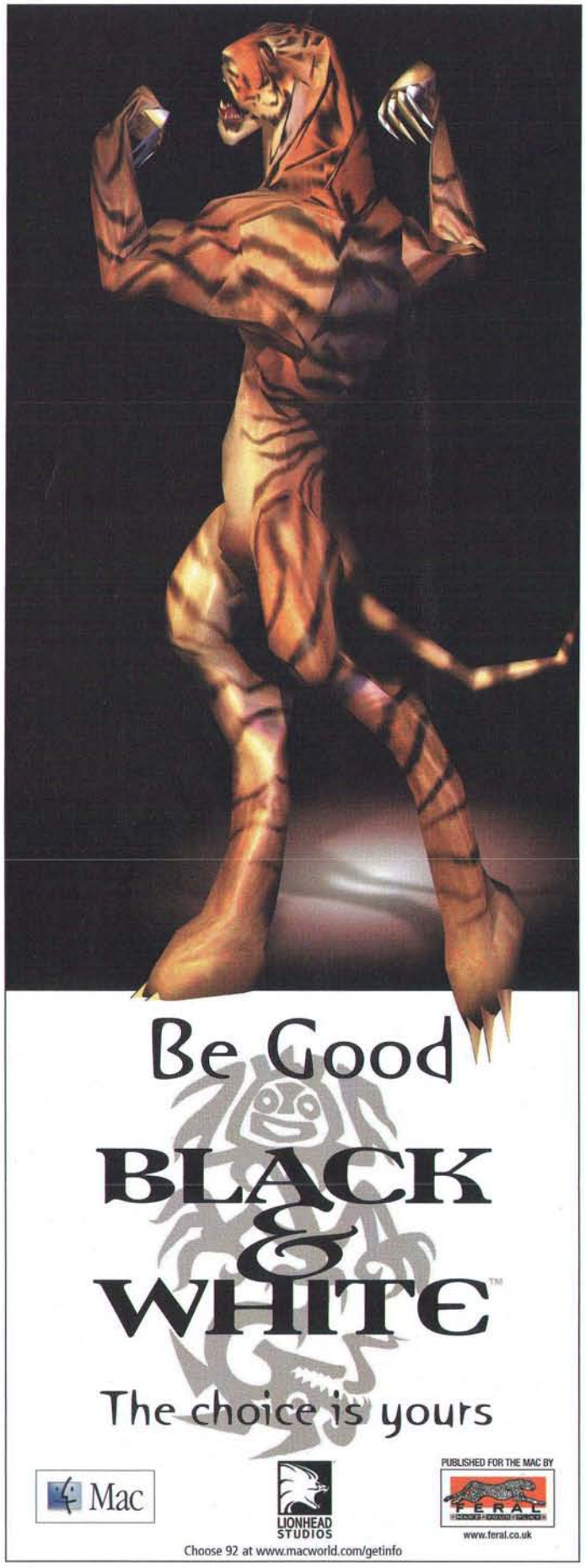

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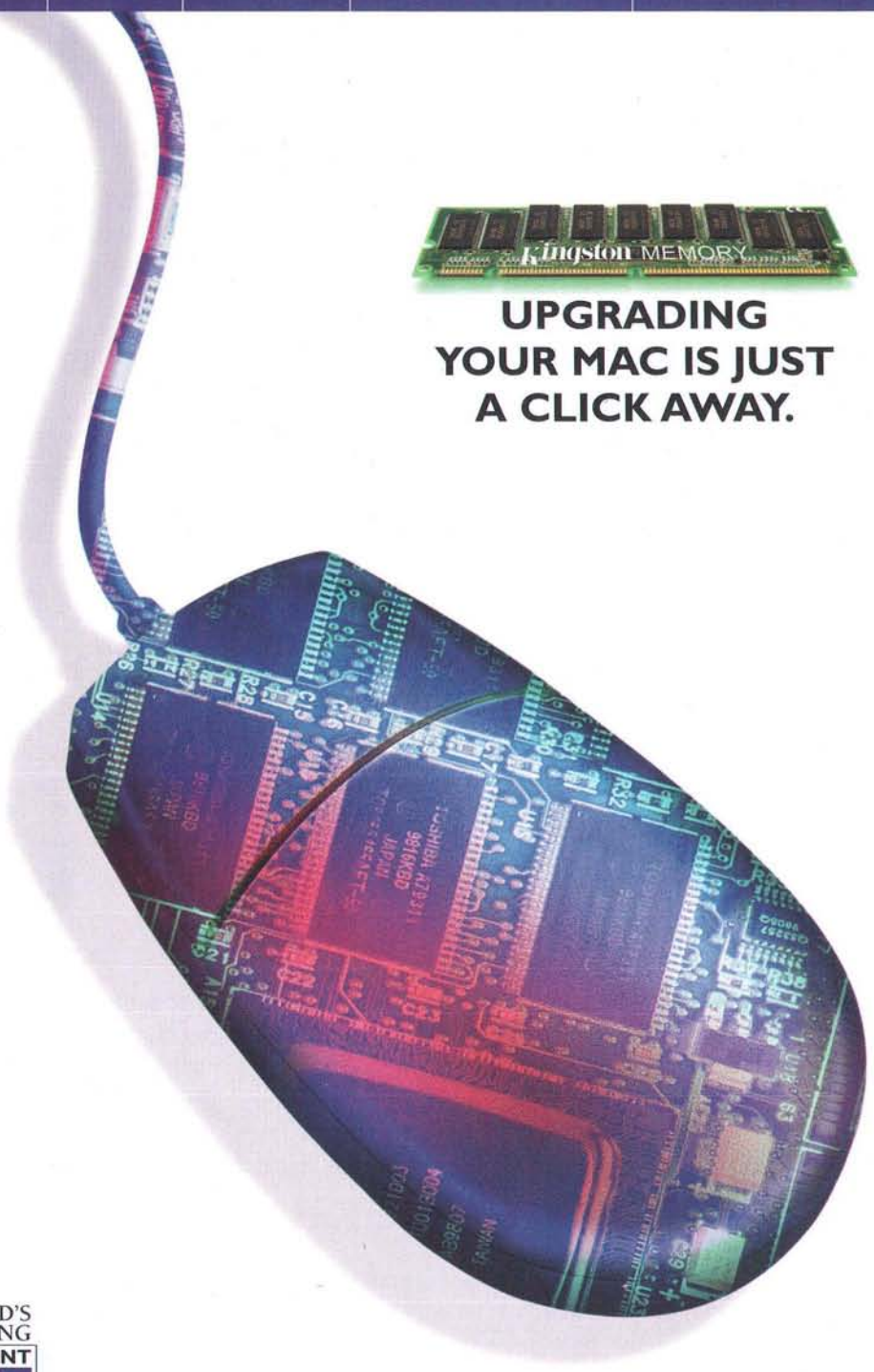

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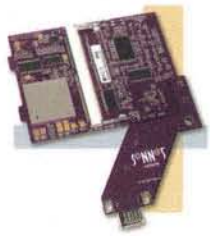
HARMONI G3



Processor Upgrade Delivers Speed Boost and FireWire to Early iMacs

You were a pioneer, someone who rushed out to buy a cool new iMac a few years ago. Your friends were jealous. But times and technologies have changed a lot, and your aging iMac hasn't been able to keep pace.

Don't toss out that near relic just yet. Sonnet Technologies has just released the Harmoni G3 Processor Upgrade/FireWire Card Combo for your iMac. For $299, owners of iMac models that have processor speeds ranging from 233MHz to 333MHz and tray-loading CD-ROM drives (iMac revisions A through D) can boost their processor speeds to as fast as 500MHz—and gain FireWire compatibility while they're at it, something that wasn't offered by previous upgrade products for the iMac from Sonnet and Newer Technology.

Roll Up Your Sleeves

Expansion was clearly not at the top of the Apple engineers' list of priorities when they designed these first iMacs. Adding RAM to these computers is enough to make many folks go running to their local Mac shop.

But if you've already found yourself elbow deep inside your iMac, this upgrade shouldn't be a problem. (A quick look at "Upgrade an iMac" [*How-to*, October 2001] will help you decide whether you're up to the task.) Sonnet's documentation is thorough, but the manual's photos are a little too small and washed out to be truly helpful. That said, performing the upgrade was straightforward.

Sum of Its Parts

We installed the Harmoni upgrade in a 333MHz iMac and got speed improvements in tasks involving the processor: iMovie rendering, MP3 encoding, and even scrolling through a Microsoft Word document. However, comparing the upgraded iMac with an iMac model that shipped with a 500MHz processor demonstrates that an upgrade card can increase performance only so much (see "Hurry Up, Harmoni").

The slower performance of the upgraded iMac can be attributed to the age of its components. The older iMac's slower, 66MHz system bus transports data through the system much more slowly the 100MHz system bus in newer iMacs.

Older graphics subsystems also pose a problem for the Harmoni upgrade when it's installed in these early iMacs, which use PCI graphics instead of the faster AGP technology in newer iMacs. In addition to slowing down performance, the older graphics proces-

> continues on page 36

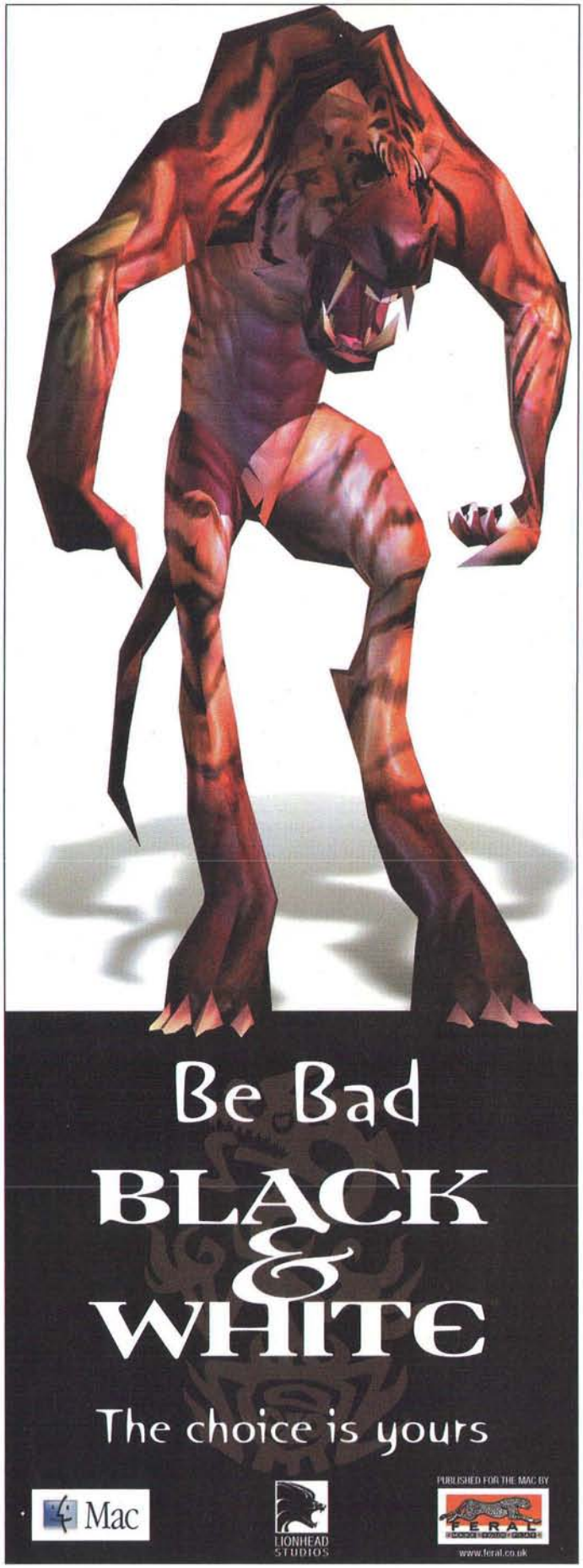
Hurry Up, Harmoni

Macworld LAB TEST

	Microsoft Word X	iMovie 2.1.1	iTunes 2.0.3	Mac OS X 10.1.2 Finder
	SCROLL	EXPORT	MP3 ENCODE	FILE DUPLICATE
Apple iMac with Harmoni G3	2:16	2:03	2:32	0:24
Apple iMac G3/333MHz	*2:33*	*2:43*	*3:17*	*0:25*
Apple iMac G3/500MHz	*1:16*	*1:53*	*2:19*	*0:14*
	< Better	< Better	< Better	< Better

BEST RESULTS IN **BOLD**. REFERENCE SYSTEMS IN *ITALICS*.

All scores are in minutes:seconds. The test systems had Mac OS X and 256MB of RAM installed. We set displays to 1,024-by-768-pixel resolution and 24-bit color. We scrolled through a 154-page document in Word. We exported the iMovie Tutorial file to QuickTime as a small e-mail movie. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long and converted it using iTunes' Better Quality setting of 160 Kbps, from the hard drive. We duplicated a 100MB file in the Mac OS X Finder.—MACWORLD LAB TESTING BY JAMES GALBRAITH



> DeBabelizer Pro 5

continued from page 33

DeBabelizer includes a bare-bones set of retouching tools that are hard-edged and move with a bit of a stutter, so you'll want to stick with the tools in a good image-editing or painting program.

Macworld's Buying Advice

If the limited scripting and batch-processing features of your favorite image editor frustrate you, then DeBabelizer Pro 5 will most likely satisfy your processing needs. If you're a Web or game designer who needs to modify and manage custom palettes and image optimizations, DeBabelizer is the only program you should consider.—BEN LONG

RATING: 3½
PROS: Full-featured scripting environment; thorough tool set; excellent palette-manipulation controls.
CONS: Somewhat cumbersome interface.
PRICE: $370
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Equilibrium, 415/453-4427, www.equilibrium.com

> Harmoni G3

continued from page 35

sors suffer from compatibility issues with OS X—and some 3-D apps that use OpenGL (such as Quake) will not run in OS X. Apple has not written OS X drivers for these older graphics processors and has not announced plans to do so in the future.

Macworld's Buying Advice

With a little technical know-how, you can use the Harmoni G3 to increase the processor speed of your older iMac, and start using FireWire peripherals with it. What the Harmoni won't do, though, is turn your iMac into the equivalent of a newer one.

But is it worth it? If you're a gamer, no. If you're a Web-surfing Microsoft Office user who's looking for FireWire compatibility and a nice speed increase for your old iMac, then the Harmoni G3 will get you there.—JAMES GALBRAITH

RATING: 3½
PROS: Well designed; works as advertised.
CONS: Older system components slow performance and limit compatibility with newer applications and system software; less-technical users may require professional installation.
PRICE: $299
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Sonnet Technologies, 949/587-3500, www.sonnettech.com

NIKON COOLPIX 5000

Solid 5-Megapixel Digital Camera Produces High-Quality Images

Nikon has recently joined Olympus, Sony, and Minolta in the 5-megapixel digital-camera market, with the introduction of the Coolpix 5000. The $1,099 camera's feature set and interface are based on Nikon's popular Coolpix 900 series, but the 5000 has a new body design and offers more control than any other camera in its class.

Body Design and Controls

While the Coolpix 995 had a unique split-body design, the Coolpix 5000 has an upright design. A molded right-side handgrip makes the camera easy to hold, and the camera's 7.1mm–21.4mm zoom lens (28mm–85mm in 35mm equivalency) extends and retracts when you turn the camera on and off. The lens is slow, however, offering only f-4.8 in full telephoto mode and a somewhat faster f-2.8 with the full wide angle.

Nikon has also added a flip-out LCD to the back of the Coolpix 5000; it's similar to the one Canon uses in its PowerShot G1 and G2 cameras. Nikon has done an excellent job of putting all essential features on the outside of the camera. Buttons on its body control shooting modes, exposure, image resolution, exposure compensation, ISO speed, and many more options.

The camera's body is surprisingly small—it's not quite as small as the Canon PowerShot S40 or the Olympus D-40Z (see "Four 4-Megapixel Digital Cameras," elsewhere in this section), but it's a light and very portable camera. However, if you have big hands, you may feel a bit cramped holding it.

One big annoyance is that Nikon has placed the flash's exposure meter right next to the handgrip, making it nearly impossible *not* to cover up the meter with your finger. This can result in poor flash performance. The Coolpix 5000 also lacks an autofocus-assist lamp—helpful in low-light situations.

Despite these flaws, the camera is solidly built and loaded with important options: Type I and II CompactFlash support, a large built-in flash and a hot shoe for adding an external flash (a first in a Coolpix), USB and AV ports, and a high-quality metal tripod mount. It also comes with a 32MB CompactFlash card, a nice touch given the camera's high resolution.

Taking Shots

Nikon offers thorough shooting controls—multiple metering modes (including a spot meter); white-balance fine-tuning; multiple focus spots; auto-bracketing; full manual controls (including focus); and adjustable settings for sharpening, contrast, and color saturation.

Two other niceties are a white-balance bracketing mode, which lets you quickly shoot a series of images with different white-balance settings, and the ability to tie the camera's spot meter to a specific spot so it's easy to get the correct exposure at the point of focus.

Shooting performance is just what you'd expect from a camera in this class. The camera starts up reasonably quickly and exhibits no shutter lag. The large internal image buffer means that the camera is usually ready when you're ready to shoot.

Image Quality

The Coolpix 5000 delivers very good image quality—with fine detail and excellent color fidelity. Like other Coolpix cameras, it can cause chromatic aberrations, and we found that the lens often produced soft-edged images. But these aberrations aren't always a concern in printed images, and carefully sharpening photos in an image-editing program is often easier than correcting images that a camera has oversharpened.

Macworld's Buying Advice

A few of the Coolpix 5000's details give us pause, but if you want to print an 11-by-14-inch (or a cropped, 8-by-10-inch) photo, you can count on this camera to deliver a high-quality image.—BEN LONG

RATING: 3½
PROS: Powerful controls; flip-out LCD screen; hot shoe for external flash; white-balance bracketing.
CONS: Bad flash-sensor placement; lens slow at maximum zoom; occasional chromatic aberrations.
PRICE: $1,099
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Nikon, 800/645-6689, www.nikon.com

OLYMPUS E20N

Professional Feel, Nice Features, but Slow Performance

With the E20N, Olympus has simultaneously upgraded its premier digital SLR, the E10, and introduced its first 5-megapixel camera.

For the most part, the E20N is the same camera as the 4-megapixel E10, but it has a 5-megapixel sensor. Olympus has also added a few features, such as a unique Progressive Scan mode and a new noise-reduction filter.

Solid Body

The E20N has the same sturdy build, all-metal body, and pro-camera heft as the E10, as well as the same nonremovable, 9mm–36mm (equivalent to 35mm–140mm) f-2.0-to-f-2.4 lens. The camera's manual-zoom ring provides quick, accurate zoom control, while the focus ring provides a manual focus like that of a film camera. Though the lack of interchangeable lenses may seem a bit dubious at this price point, it's hard to complain about the quality or feel of the E20N's lens, and the new camera is fully compatible with Olympus's previous lens-extension offerings.

The E10 and E20N are unique among digital SLRs in that they allow you to use the LCD screen as a viewfinder, in addition to the normal TTL optical viewfinder. What's more, the LCD can tilt out and away from the camera's body, ideal for waist-level shooting.

In Control

The E20N's controls are located on the top, back, and left side of the camera, and most critical functions have a dedicated control. You access most controls by holding down the appropriate button while rotating the camera's control wheel, which pretty much precludes one-handed operation and sometimes forces you into an awkward grip.

The E20N packs most of the features a serious digital photographer needs, but disappointingly, it lacks any kind of flexible auto-exposure control for cycling through reciprocal exposure settings. And the absence of a depth-of-field preview is conspicuous.

The E20N's built-in flash is strong and well suited to most snapshot situations. For more-serious flash work, Olympus provides a hot shoe and an external sync for compatibility with all of its flashes.

Shooting with the E20N is relatively comfortable, thanks to the camera's ergonomic design. The camera has four shooting modes: full auto, full manual, and either aperture or shutter priority. The E20N's new Progressive Scan mode delivers images with only half the available resolution but allows for shutter

speeds as fast as 1/18,000 of a second (normally the camera maxes out at 1/640 of a second). This would be a handy feature for sports photographers, but the camera's performance is too slow for this type of work—which brings us to our main complaint.

In addition to having slow boot times (roughly 6 seconds to boot or wake up from sleep), the camera is excruciatingly slow at saving images. In super-high-quality mode, the E20N routinely took 10 to 15 seconds to save images. If you're using the optical viewfinder, you can start shooting again right away, but if you're using the LCD as a viewfinder, you'll need to wait until the camera is done recording.

Image Quality

Overall image quality is very impressive, with excellent detail, vivid but not oversaturated color, and minimal artifacts. The E20N's additional resolution is certainly welcome.

The E20N offers ISOs of 80, 160, and 320, and Olympus has added an effective noise-reduction filter for long-exposure images. Overall, noise levels on the E20N are a little bit higher than we'd like but perfectly acceptable.

Macworld's Buying Advice

The E20N is a nice improvement on the E10, and there's no doubt that the camera's design gives it a professional feel. Until Olympus improves its performance, though, it will be best in situations where image quality is more important than speed—studio or landscape work, for example.—BEN LONG

RATING: 3½

PROS: Excellent optics; well built; very good image quality.

CONS: Slow write performance.

PRICE: $1,999

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Olympus, 415/453-4427, www.olympusamerica.com

BACKUP TOOLKIT 3.0

Basic OS X Backup Utility Gets the Job Done—in Spite of Some Quirks

You know you ought to back up important files regularly—but before OS X 10.1.2, it was not possible to fully back up and restore an OS X hard drive. FWB Software's $50 Backup Toolkit 3.0.5 is the first commercially available backup utility that can handle this job. It also works well in both OS 8.6 and OS 9.

Simple but Quirky

Backup Toolkit can back up only to online storage—that is, anything you can see in the Finder, such as hard drives, Jaz and Zip drives, file-server volumes, and iDisks. It doesn't work with offline storage, such as CD-RW burners or tape drives. This limitation is apparent the first time you use Backup Toolkit's drag-and-drop interface.

We tested Backup Toolkit's principal claim—that it can successfully back up and restore an OS X hard drive—and found that it does work, but only if you are logged on as the root user when you perform all backups and the restore operation. (For more on root access, see *Mac OS X Secrets*, October 2001.)

Still, there's a lot to like in Backup Toolkit. The Synchronize tool is great for maintaining the same versions of files in multiple locations. And the Incremental and Evolutive backup modes take different approaches to backing up multiple revisions of files, allowing you to restore a version earlier than the one you backed up most recently.

Macworld's Buying Advice

FWB's Backup Toolkit 3.0.5 works well enough for OS 9 and OS X users who need to save a few critical files to a file server, a backup hard drive, or an iDisk. It's a great product to use until an OS X–native version of the standard, Dantz's Retrospect, ships.—JEFF PITTELKAU

RATING: 3½

PROS: Easy to use; multiple ways to back up files.

CONS: You must log on as root to back up and restore everything on an OS X hard drive.

PRICE: $50

OS COMPATIBILITY: Mac OS 9, Mac OS X

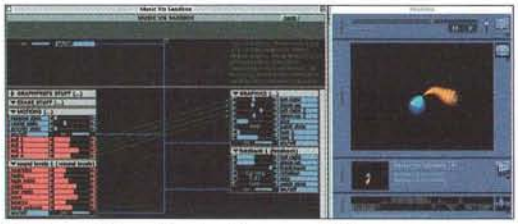
COMPANY: FWB Software, 408/969-8620, www.fwb.com

ONADIME COMPOSER 1.4

Intuitive Video Tool Creates iTunes-like Visuals

If you're intrigued by iTunes' Visuals window and want to create similar interactive montages that respond not only to music but also to keyboard, mouse, and MIDI input, Onadime Composer 1.4 may be the tool for you—as long as you're willing to put up with the program's rough edges.

Onadime produces images that are more varied than those created by iTunes, largely because Onadime lets you work with a number of media, including GIF and JPEG images, movies, sounds, and text. Using a series of filters (or *forms*, in Onadime parlance), you modify images—changing their color or rotating them—and switch from one image to another. You trigger actions with input sources, such as MP3 and AIFF sound files, live video (for example, a camcorder), and the Mac's input or disc drive, and input devices, such as keyboards, mice, Wacom graphics tablets, and MIDI keyboards.



Start on a Dime Onadime Composer 1.4 lets you create compositions by linking inputs and destinations.

You might, for instance, create a form in which the variation in an audio file's low frequencies dynamically modifies an image's color, creating a cool pulsing image synched to the beat of a bass drum. You create these dynamic images by dragging an input source (such as that low-frequency bass-drum beat) onto an output destination (rotation or a color change, for example) in the program's Links window.

Onadime's Console window's oscilloscope-like viewer lets you view your composition, control your computer's CD player, and monitor sound input. The program also has a full-screen Performance mode that displays compositions without any extraneous clutter. Other people can view your compositions with Onadime's free Player program or as QuickTime movies.

Onadime is easy to use, and it can generate impressive results, but it needs polishing. On our 400MHz Titanium PowerBook G4, compositions and sound stuttered when we used the DVD player as an audio source. When we exported compositions as QuickTime movies, portions of the compositions were cut off. And although the package and the PDF manual show the program running in OS X, the version we reviewed was not OS X–native and ran poorly in the Classic environment.

Macworld's Buying Advice

VJs and other live performers will find Onadime Composer immediately useful. If you're interested in creating dynamic video compositions, you might, too.—CHRISTOPHER BREEN

RATING: ♦♦♦
PROS: Easy to use; solid collection of input sources and destinations.
CONS: Stuttering with CD/DVD input; imperfect QuickTime export.
PRICE: $199
OS COMPATIBILITY: Mac OS 9
COMPANY: Onadime, 877/662-9037, www.onadime.com

DiskWarrior® has than

1999 Macworld Editors' Choice Awards
Winner, Utility Software. "DiskWarrior is an excellent ax to add to your disk-repair and -maintenance arsenal. DiskWarrior's ease of use, speed, and new method of fixing disk problems make it a powerful disk-maintenance product."

1999 MacUser Awards
Best Utility/Enabling Software. "For providing a new, easier to use, safer, and often more successful alternative to more bloated recovery applications, the judges felt DiskWarrior deserved top billing..."

1999 Apple Design Awards
Most Innovative Product, Runner-up Best New Product

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"Every Mac on the planet can benefit from DiskWarrior!"

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Now with DiskShield™ to prevent damage to your disks before it

FAXSTF X

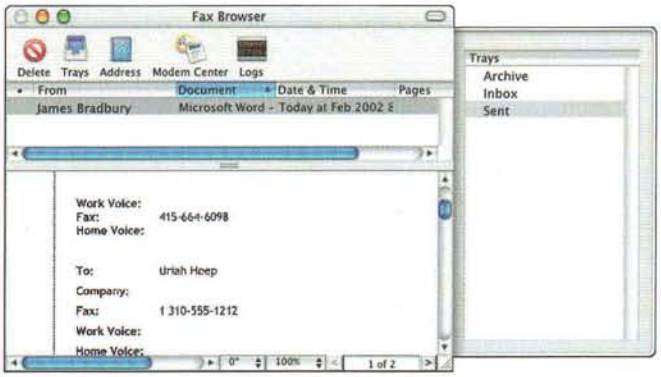
Fax Application Fails to Make the Connection

Although Smith Micro's Faxstf X shares part of its name with software that has been bundled with countless modems, it's actually a brand-new (and the very first) Mac OS X–only application for sending and receiving faxes. Like its namesakes, Faxstf X lets you prepare and send faxes just as though you were printing documents. The program saves received faxes as PDF files, and a simple Fax Browser utility, modeled after Apple's Mail, keeps track of document comings and goings.

Unfortunately, the program has a few rough edges. For instance, the Preview button that appears in every OS X Print dialog box—and every time you send a fax—has nothing to do with Faxstf X. Clicking on it will "essentially abort the Print job," as Faxstf's manual says, a problem Smith Micro blames on OS X.

You must include a cover sheet with each fax whether you want to or not (Smith Micro plans to include a cover-page option in an upcoming release). But don't expect to create custom cover sheets showing your business's logo, because the cover sheet is based entirely on the information in your vCard, which you create as part of OS X's Address Book. Similarly, you can address faxes only by dragging one or more vCards from the Address Book to the Faxstf Print dialog box.

If your fax doesn't go through, Faxstf's Fax Browser won't tell you so; your fax sits in the Sent tray just as though it actually went somewhere. (The company claims that a future release will include error messages.) Only by examining the program's log file will you discover that your transmission failed. Perhaps even more irritating, you're then forced to prepare and address the fax all over again—there's no way to resend a fax.



Returned to Sender? Faxstf X's Fax Browser window shows a fax in the Sent tray—even though that fax never actually went anywhere.

Macworld's Buying Advice

For people who send faxes occasionally, Faxstf X does offer welcome, relatively straightforward functionality that is otherwise unavailable in OS X. Anyone who relies heavily on fax transmissions, however, will find it inadequate. This software is no replacement for a dedicated fax machine.—JAMES BRADBURY

RATING: 2½
PROS: Easy to use.
CONS: Limited features; immature interface.
PRICE: $80
OS COMPATIBILITY: Mac OS X
COMPANY: Smith Micro, 816/554-8565, www.smithmicro.com

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any disk utility ever.

mac today EDITORS' CHOICE '98
Mac Today 1998 Editors' Choice Awards
Outstanding Disk Rescue Product. "DiskWarrior belongs in the arsenal of every Mac owner!"

MacHome MACnificent Award
MacHome - Five Apples, MACnificent Award
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2000 Home Choice Awards MacHome Journal
MacHome 8th Annual Home Choice Awards
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Four 4-Megapixel Digital Cameras

High-Resolution Models from Canon and Olympus Focus on Portability, Expanded Controls

BY JEFF KELLER

Few things today change as quickly as digital cameras. Prices drop, quality increases, and confusion reigns. Last year, soon after we all got adjusted to 3-megapixel cameras, we saw a flurry of cameras with 4- or even 5-megapixel CCDs. As the editor of the Digital Camera Resource Page (www.dcresource.com), I've seen them all, the good and the bad. As this column evolves, my goal is to keep you abreast of the digital-camera market—so when you decide to buy or upgrade, you'll be able to make the right decision.

In this, my first column, I'll look at four of the most talked-about 4-megapixel cameras—two full-featured devices, Canon's PowerShot G2 and Olympus's C-4040 Zoom; and two compact cameras, Canon's PowerShot S40 and Olympus's D-40 Zoom. All four feature a 3× optical zoom lens (or close to it) and a wealth of manual controls. And all are compatible with Mac OS X and Apple's iPhoto.

But before we get to the cameras, we need to address one question: When everything you've heard says that 3 megapixels is enough for a good 8-by-10-inch print, do you need to spend the extra dough on more pixels? Well, more *is* sometimes better, especially when you want to crop a photo tighter and still be able to print a large image. Also, the higher-density CCDs *can* give you more data to play with, letting you coax details out of the shadows. Similarly, resizing a 4-megapixel photo down to 3 megapixels will often yield better results than taking the same photo with a 3-megapixel camera.

Canon PowerShot G2

The PowerShot G2 ($899) is currently Canon's high-end consumer digital camera. It's an updated version of the popular 3-megapixel PowerShot G1, adding better color accuracy, new focusing and metering systems, and less noise in long-exposure photos.

Canon includes excellent extras with the G2: a rechargeable Lithium battery and charger (which doubles as an AC adapter), 32MB CompactFlash card, and an expansive software bundle. (The G2 and the S40 are fully compatible with Type II CompactFlash cards, including IBM's Microdrive.)

The G2's body is solidly constructed and easy to hold. One of the G2's standout features is its flip-out, rotating LCD, which allows you to take pictures in many situations where a regular LCD wouldn't cut it. Another handy feature is this camera's autofocus (AF) illuminator, for focusing in low-light situations.

The 7mm-to-21mm f-2.0 lens (equivalent to 34mm-to-102mm on a 35mm film camera) is threaded, and Canon offers wide-angle and telephoto conversion lenses. The camera has a hot shoe for an external flash as well.

The G2 has more manual controls than almost any other digital camera I've seen. You've got full control of shutter speed and aperture, numerous white-balance settings, flash and exposure bracketing, continuous shooting, and the capability to save images as JPEGs or in Canon's proprietary RAW image-file format. (RAW files are uncompressed images that take up a lot less space than TIFFs, although you must convert them via Canon's RAW Image Converter software before using them in an image-editing program or other application.)

Canon PowerShot S40

The PowerShot S40 ($799) is essentially the same camera as the G2, but it's packed into a smaller, all-metal body, and it has a more compact 3× 7.1mm-to-21.3mm f-2.8 zoom lens (the 35mm equivalent is 35mm to 105mm). Due to its smaller size, the S40 lacks the G2's rotating LCD and support for external flashes and lenses.

The S40 ships with the same software as the G2, but it comes with a 16MB CompactFlash card and a smaller-capacity battery (with recharger). It offers the same plentiful set of manual controls, and its maximum shutter speed is 1/1,500 of a second (the G2's maximum is 1/1,000 of a second).

Like many of today's digital cameras, both the S40 and the G2 include a number of preset scene modes. Choose one (portrait, landscape, night, color effect, panorama assist), and the camera uses the appropriate settings. The panorama helper is great for stitching several shots into one.

The quality of the images from both cameras is excellent—color fidelity is right on (and you can use the color-effect mode to make colors more vivid or more neutral), images are sharp, and the shadows exhibit little noise.

One nice option you can get for the S40 is a waterproof camera case ($240), which lets you take the camera underwater, as deep as 30 meters.

Olympus C-4040 Zoom

The $799 C-4040 Zoom (C-4040Z) is one of the best full-featured cameras from Olympus, though its bundled extras are not as good as those included with Canon's G2. You get a 16MB SmartMedia card but no rechargeable batteries, and the manual comes in PDF format on a CD (though a small quick-start document is also included). Olympus's Camedia Master software also leaves much to be desired (compared with Canon's software), as does the manual's quality.

The C-4040Z's fast f-1.8 lens has a 35mm focal range of 35mm to 105mm, and the lens is threaded for use with conversion lenses. You can use an external flash unit, but doing so requires the purchase of a flash bracket and sync cable.

The C-4040Z also has a full suite of manual controls for settings from shutter speed and aperture

The Canon PowerShot G2

The Canon PowerShot S40

The Olympus C-4040 Zoom

The Olympus D-40 Zoom

Four 4-Megapixel Digital Cameras Compared

PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY	CONTACT	PROS	CONS
Canon PowerShot G2	●●●●½	$899	Mac OS 9, Mac OS X	800/652-2666, www.powershot.com	Excellent photo quality; swiveling LCD; extensive manual controls; support for external flash/lens; RAW mode; good bundle.	Proprietary battery.
Canon PowerShot	●●●●	$799	Mac OS 9, Mac OS X	800/652-2666, www.powershot.com	Excellent photo quality; RAW mode; full manual controls; good bundle.	Proprietary battery; No LCD info display; cluttered controls.
Olympus C-4040 Zoom	●●●½	$799	Mac OS 9, Mac OS X	800/645-8160, www.olympusamerica.com	Very good photo quality; fast lens; full manual controls; support for external flash/lens (with optional bracket).	No autofocus illuminator; some images display purple fringing; poor bundle.
Olympus D-40 Zoom	●●●●	$699	Mac OS 9, Mac OS X	800/645-8160, www.olympusamerica.com	Small and light; very good photo quality; lots of manual controls; LCD info display on top of camera.	No autofocus illuminator; some images display purple fringing; poor bundle.

to focusing and white balance. A sequential shooting mode lets you take as many as 8 pictures at 2 frames per second.

In addition to saving images as JPEG files, the C-4040Z can store pictures as TIFFs, which occupy more space than Canon's RAW format. It takes a long time to write a TIFF to the memory card, and the camera is unresponsive until it has finished. Both Olympus cameras can also interpolate images up to 3,200 by 2,400 pixels, but image quality is not as crisp as it is at the maximum hardware resolution of 2,272 by 1,704 pixels.

Olympus D-40 Zoom

The $699 D-40 Zoom (D-40Z) is the smallest camera of this group, weighing just 6.7 ounces. Roughly the size of a deck of cards, the camera is smaller than the PowerShot S40. The D-40Z's bundle also pales in comparison with those from Canon: you get a 16MB SmartMedia card, a nonrechargeable Lithium battery, and a CD-based manual. The D-40Z has a 2.8×, f-2.8 zoom lens with a 35mm equivalent of 35mm to 98mm. It has no support for add-on lenses or an external flash.

It's a rarity for a small camera to have a status display on top, but the D-40Z does (the S40 does not). This is nice because you don't need to use the main LCD display to see the current settings or the number of photos remaining.

The D-40Z has a mode dial with a wide variety of preset scenes; it's similar to that of the PowerShot cameras. Two of the more unusual scenes are a self-portrait mode and a scene that stores your favorite settings so you can quickly access them without making a trip to the menus.

The D-40Z has the same manual controls as the 4040Z, the only difference being a faster top shutter speed of 1/1,000 of a second.

In addition to the Lithium battery, both Olympus cameras can use standard AA batteries; Canon's proprietary rechargeable battery is more expensive, but Canon mitigates this by including an extra battery and charger.

Final Thoughts

You could buy any of the products reviewed here and end up with a great camera, but in each size range, one stands out.

In the full-size category, the PowerShot G2 outshines the C-4040Z. It has a rotating LCD, superior image quality, more manual controls, a hot shoe, and better extras—such as the AF illuminator and IBM Microdrive support. The photo quality of both cameras is excellent, though in some situations the C-4040Z tends to experience more chromatic aberrations (which show up as purple fringing around some edges). This can look bad on screen, but it's generally not a problem in printed images.

If you value portability over features, I recommend the D-40Z as slightly better than the PowerShot S40. The S40 has a superior bundle and a larger LCD, and its RAW image mode is more responsive than Olympus's TIFF mode, but I still preferred the D-40Z's more compact body (and lower price)—it is a great point-and-shoot camera.

I ran into the chromatic-aberration issue occasionally with the D-40Z, but I don't consider it a major problem; image quality for both the S40 and the D-40Z is very, very good. (If you don't need 4 megapixels but do like the S40's form factor, Canon's $699 PowerShot S30 is a 3-megapixel camera that's identical in size and feature set to the S40.) □

JEFF KELLER is the editor of the Digital Camera Resource Page (www.dcresource.com), which includes reviews and ratings of more than 350 digital cameras, and dvspot (www.dvspot.com), a consumer DV-camcorder site. Send feedback about this column to reviews@macworld.com.

DISCRIBE 5.0

CD-Burning Program's New Tricks Don't Quite Measure Up

The newest version of CD-burning program Discribe has many improvements—it runs on Mac OS X and supports many more drives—but it just doesn't stand up to the stiff competition posed by Roxio's Toast 5 Titanium.

With version 5.0, Discribe runs natively in OS X, as does Toast 5 Titanium. The Discribe installation disc comes with separate versions for OS 9 and OS X, but the OS 9 version is a bit tricky to install—it requires you to choose a SCSI/ATAPI, USB, or FireWire installation, instead of just installing any drivers you may need.

Earlier versions of Discribe lacked support for some USB and FireWire drives (see *Reviews*, July 2001). The program now supports about 250 CD-R, CD-RW, DVD-R, and DVD-RW drives. It even includes a generic driver for those drives not in its database. As a result, we were able to burn media successfully on a variety of CD-RW drives and an internal SuperDrive.

Discribe 5.0 also adds the ability to burn DVD movies—but only if the files and disc structure were created elsewhere—and data discs in the Universal Disc Format (UDF) on both CD and DVD media. And Video CD (VCD) burning has been improved to accept more types of MPEG-1 files. However, unlike Toast 5 Titanium, Discribe still can't encode QuickTime files for making VCDs.

When it comes to audio, Discribe 5.0 can burn AIFF files directly to CD media and can convert WAV, MP3, and SDII files for making music CDs, as did Discribe 4.0. It supports Disc-At-Once burning and pretrack gaps of between zero and nine seconds. AudioScribe, Charismac's application for recording music from LPs and cassettes, is still included—but it works only in OS 9.

Macworld's Buying Advice

Discribe 5.0 covers the basics well, but we can't fully recommend it: although Toast costs more, it includes more options for burning and is the better value.—JONATHAN SEFF

RATING: ●●●½
PROS: Improved file-format and drive support; simple interface.
CONS: AudioScribe runs only in OS 9; no VCD encoding; somewhat complicated OS 9 installation.
PRICE: $70; competitive upgrade, $30
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Charismac Engineering, 800/487-4420, www.charismac.com

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Sheep, Myth III: The Wolf Age, Harry Potter and the Sorcerer's Stone

Myth, Magic, and Mutton

WHETHER YOU'RE IN THE MOOD FOR SOME LIGHTHEARTED fun, a hard-core strategy-game challenge, or a 3-D action adventure, this month's column is sure to please. I've got 'em all in my bag of goodies—Sheep, Myth III: The Wolf Age, and Harry Potter and the Sorcerer's Stone.

Baa Ram Ewe

At first, the idea of a game about sheep may seem almost absurd. How can these benign, cute, fluffy animals possibly create an appealing game? But Sheep isn't only about sheep—it's about herding them through dozens of brain-twisting obstacle courses that will challenge your puzzle-solving skills and your ability to keep up with the action.

Baa-d Hair Day Guide sheep safely past hazards galore.

You're either a shepherd or a sheepdog, and it's your job to keep your flock out of harm's way. The faster you do so, the more points you collect. You can also pick up Golden Sheep, which unlock bonus levels. You face strict time limits and must keep your herd together; if too many of your herd's sheep get killed, you'll have to replay the level.

The game looks reasonably modern because it uses 3-D–rendered (albeit cartoonish) graphics and displays everything from a bird's-eye view, above and at a slight angle to the action. You navigate maps of each level by scrolling up, down, left, and right. There's no shortage of eye-catching animation as you and your sheep encounter countless obstacles and hazards.

Getting your sheep to move is easy—they'll automatically head away from you unless you're holding a treat—but getting them to move in exactly the direction you want is a bit trickier. The sheep have different personalities and react to individual shepherds in different ways (you choose one of four shepherd personalities at the start of the game).

Shepherding may seem like a monotonous profession in real life, but in this game it's anything but. These poor sheep face certain doom at every corner, whether it's from mutant sharks that live in cornfields, threshing machines, helicopters and tanks, industrial machinery that can tear them to bits, or even space-born perils such as blasting rocket engines and black holes. Although your sheep run the risk of being vaporized, eaten, and electrocuted, graphics are comical and never excessively gory.

With adorable graphics, a bouncy soundtrack, and fairly simple game play, Sheep is suitable for the whole family—but don't think that just because it's cute it's an easy game. Many of the puzzles are maddeningly difficult. Luckily, you can save the game between levels, so you can stop the game and start where you left off if you get particularly stumped.

U.K. Mac game maker Feral Interactive financed the Mac conversion and is publishing Sheep internationally. Feral has struck a distribution deal with Texas-based GraphSim Entertainment. Hopefully, this arrangement will give Feral wider exposure in the lucrative North American Mac game market, where the publisher has had a spotty presence in the past.

> How can these benign, cute, fluffy animals possibly create an appealing game?

Sheep's major shortcoming is that it's native only for OS 9. It runs in OS X's Classic mode, but I'd love to see Feral update this game with a Carbon patch, as Blizzard Entertainment has done for Warcraft and Starcraft. Judging from the crowds this game drew at its Mac debut at Macworld Expo San Francisco earlier this year, Sheep may very well be popular enough to merit the effort.

Myth and Reality

If you ask any fan of Mac strategy games what the best real-time strategy-game titles are, chances are Bungie Software's Myth games will be on the list. The series has approached legendary status for its deep story line, focus on squad-based strategy, and >>

Mankind's Greatest Hero In Myth III, you must defeat the Myrkridia and the Trow before they destroy humanity.

<< terrific multiplayer capabilities. It has also spawned a subculture of custom-map and game-modification makers who have added new content to the game. For these reasons and more, it made sense for Take Two Interactive to continue the product when it acquired the rights to the Myth line.

The first thing to understand about Myth III: The Wolf Age is that it plays like the original. The next thing to understand is that it utilizes different technology, so throw away any preconceived notions based on how the first two Myth games and their myriad modifications looked and felt.

This game is a prequel, set 1,000 years before the events recounted in Myth: The Fallen Lords and Myth II: Soulblighter. The game's creators took into account the existing mythology of the Myth universe and built a story that fleshes out details Myth fans have pondered for years.

In this installment, you assume the role of Connacht the Wolf. This wild barbarian is mankind's greatest hero, a charismatic leader who takes legions into battle against the vile Myrkridia and the oppressive Trow, two races of beings that seek to destroy humanity.

Like the preceding games, Myth III unfolds in a series of chapters or vignettes similar to those of an epic fantasy novel. Whether the story works for you will depend on how much you've invested in the first two games—for neophytes, taking it all in can be a bit daunting. Cut scenes of unexceptional quality flesh out the story a bit. The two previous versions of the game used excellent cel-animated sequences to explain the story. I miss these.

For people unfamiliar with Myth and Myth II, Myth III includes tutorials that help players understand the sometimes-complicated moves required for play. The tutorials also cover the basics of what each unit does and how they interact with their environment and one another.

As in the first two Myth games, initially you find yourself in a 3-D environment rendered from a bird's-eye view. Camera control in Myth has always been superlative, and this game is no exception: You can zoom, scroll, and pan, getting a clear understanding of your surroundings before moving troops into battle.

Myth III's graphics are definitely several notches better than those of the first two games. Wholly dependent on 3-D–graphics-card acceleration, this game has gone completely polygonal. The environment, all the creatures you'll encounter, and your troops sport excellent levels of detail. Even the gore is marvelously realistic, if that's your thing.

> Even the gore in Myth III has marvelous detail, if that's your thing.

You'll find a lot more creatures to kill in Myth III, thanks to the addition of dozens of new unit types. Many of them are just different subcategories of the same monsters, each with distinct capabilities. For the most part, friendly units haven't changed a bit, but there are a few additions. >>

Larger than Life Myth III's new 3-D engine lets you get close to the action and the fine detail.

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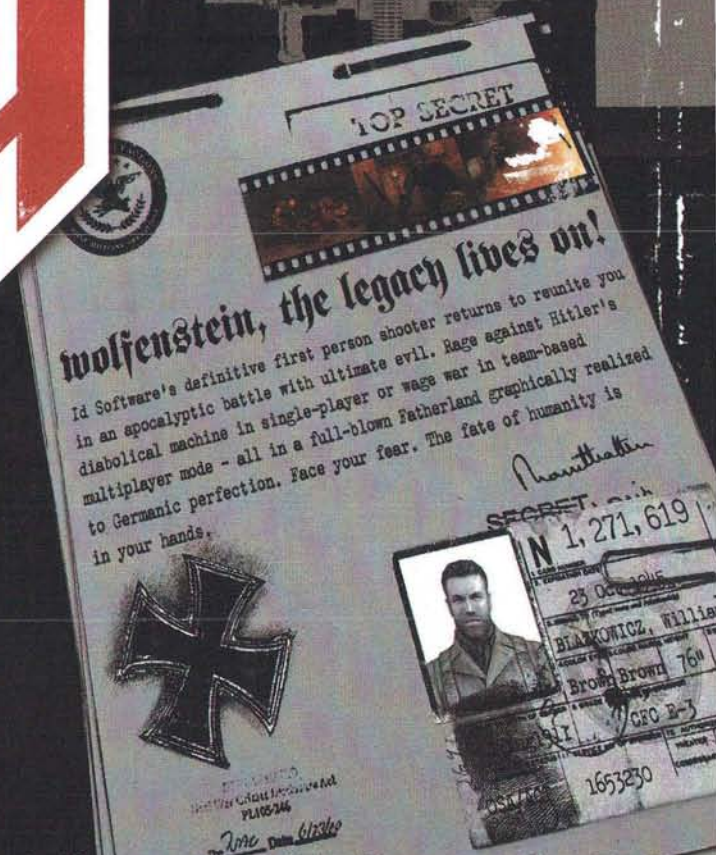

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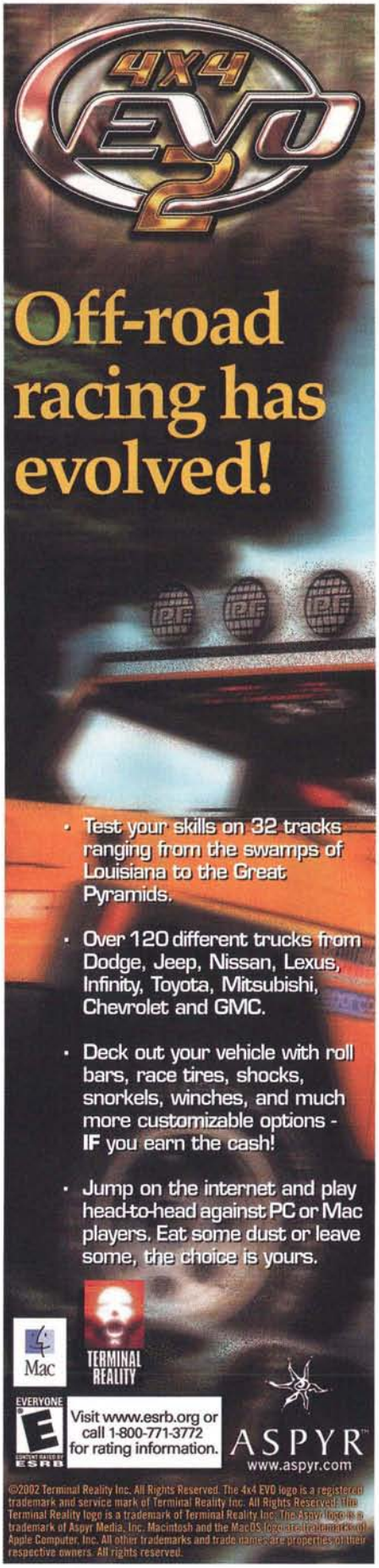

<< Multiplayer gaming in Myth has always been a cornerstone of game-play longevity, and you'll find that it's no different in Myth III. However, there is one important change—instead of using the Bungie.net gaming service, you play through GameSpy.com. Despite the lack of a GameSpy Arcade client for the Mac, the service supports Mac players using connectivity built into the game itself. And Mac gamers are perfectly able to play against their PC counterparts. If you don't want to use a service, you have the options of LAN play and TCP/IP-based hosting.

Flick of the Wrist Harry gets the chance to cast spells left and right in this fun-filled 3-D–action game.

One important aspect of Myth multiplayer gaming is the variety of game types you can play. Myth III serves up a healthy portion: there are more than a dozen options, including old favorites such as Steal the Bacon, as well as Scavenger Hunt, Flag Rally, and Assassin.

On its own merits, Myth III: The Wolf Age is a solid real-time strategy game. It's not all it could have been, however. Alas, the team that made this game won't get another crack at a sequel—the group disbanded shortly after completing Myth III for the PC. One can only hope that Take Two Interactive and Myth's publisher, MacSoft, won't let the franchise die here; Myth means too much to too many players to let it drift away.

Flipendo!

That's the name of the first spell Harry Potter, as a first-year student at Hogwarts School of Witchcraft and Wizardry, learns to cast. When my kids got this game, it set them into gales of laughter as their mother and I ran around the house waving pretend magic wands, shouting, "Nintendo!" instead. In case you've somehow missed the phenomenon, I'm talking about *Harry Potter and the Sorcerer's Stone*, the phenomenally successful book, motion picture, and now computer game. Aspyr Media licensed this one for the Mac from the folks at EA Games, and it's a terrific romp through a make-believe world of wizards, ghosts, gnomes, trolls, and other fanciful beings.

This game follows the story presented in the first book of J. K. Rowling's series, which tells the story of the young orphan boy Harry Potter. Sent to a boarding school to learn his forebears' wizardly ways, he soon confronts the same evil that killed his parents when he was just an infant.

Based on the same underlying technology that powers the first-person action game Unreal Tournament, Harry Potter is shown from a third-person perspective similar to Tomb Raider's, and many of its puzzles are of the same type as that game's—you have to find and activate locks that open secret passages and new areas, collect items, and overcome various menaces. This involves a lot of climbing, jumping from platform to platform, and other hallmarks of the third-person–action genre.

As Harry makes his way through Hogwarts, he learns new spells and accumulates goodies, such as Chocolate Frogs and Wizard Cards, all of which he can put to use as he progresses. Harry will interact with all the major characters from the first book: his friends Ron Weasley and Hermione Granger, Albus Dumbledore, Professor Quirrell, and even, eventually, the dreaded Voldemort.

Although Harry Potter and the Sorcerer's Stone uses the same technology as Unreal Tournament, don't think for a second that this is a hard-core action game. There is no blood and gore, the puzzles are fairly easy to solve, and the levels are easy to navigate. It is challenging, though, and on more than one occasion—especially when Harry confronts menaces—the challenge can get frustrating enough to create a white-knuckle experience. >>

> It's a terrific romp through a make-believe world.

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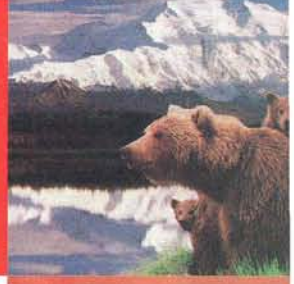

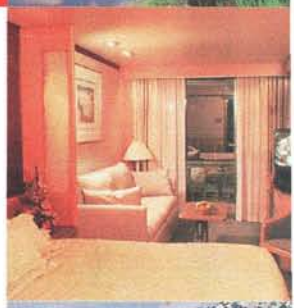

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Fri., 5/31	Scenic Glacier Bay Cruising	—	—	1:30 – 5pm; 6pm – 7pm
Sat., 6/1	Ketchikan	10am	6pm	6pm – 8pm
Sun., 6/2	Cruising the Inside Passage	—	—	8:30 – noon & 1:30 – 5pm; 6pm – 7pm
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Wandering Wizard Interact with Ron, Hermione, and Harry Potter's other friends from the books and movie.

<< Because the game is designed to be accessible to younger players who presumably have less experience, it simplifies navigation and game saving. Each level features floating books, which, when Harry touches them, save the game where it is. And if you activate the Auto-jump option, it's much easier for Harry to hop from platform to platform. Kids will still need to be familiar with the keyboard to activate various functions—they'll use the arrow keys to move and the mouse to learn and activate new spells. An introductory level also helps players understand how to move in and interact with their environment.

Every level has a definite starting and ending point. While this may put you off if you were hoping to explore Hogwarts and its grounds unencumbered, it does provide a straightforward and linear experience for younger or less-experienced players.

One fantastic inclusion in this game is Quidditch, the arena sport that witches and warlocks play on broomsticks. It's a high-speed team game involving different types of magic balls that players must dodge, throw through hoops, and catch. The game's designers have done a great job of re-creating it, and it's arguably the part of the game that's the most fun.

The production quality is top-notch, with a rich color palette and eye-catching special effects. Some of the graphics appear a bit blocky, but animation is overall smooth.

Music and sound also add special appeal. Hogwarts is full of creaks, rattles, the moans of ghosts, and other ambient noises (which may put off the very young players). It definitely creates a sense of place.

Some might say that the world created by J. K. Rowling should have stayed on the page, and in truth nothing can re-create an environment as rich in detail and imagination as that of her books. But there's still a vicarious thrill in being able to experience the world of Harry Potter through the eyes of Harry himself. In that respect, Harry Potter and the Sorcerer's Stone succeeds admirably.

Macworld's Buying Advice

Sheep and Harry Potter and the Sorcerer's Stone are both family-friendly games; these titles let players of all ages have a bit of fun. Sheep is an entertaining combination of action and puzzles, while Harry Potter and the Sorcerer's Stone brings third-person 3-D gaming to an extraordinarily popular franchise. Myth III: The Wolf Age also has a lot to offer fans of real-time strategy games, although the game's emphasis on the mythology of preceding games may confuse Myth neophytes. □

SHEEP

RATING: ♦♦♦½
PROS: Cute graphics and challenging game play.
CONS: No native OS X support; some frustrating levels.
PRICE: $35
OS COMPATIBILITY: Mac OS 9
COMPANY: GraphSim Entertainment, 972/386-7575, www.graphsim.com

MYTH III: THE WOLF AGE

RATING: ♦♦♦♦
PROS: New 3-D engine; deep multiplayer gaming support.
CONS: Muddied story line may confuse Myth newcomers; low-quality cut scenes.
PRICE: $50
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: MacSoft, 800/229-2714, www.wizworks.com/macsoft

HARRY POTTER AND THE SORCERER'S STONE

RATING: ♦♦♦♦½
PROS: Great graphics; easy game play for less-experienced players; excellent re-creation of Quidditch.
CONS: Not challenging enough for experts.
PRICE: $30
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Aspyr Media, 888/212-7797, www.aspyr.com

MacCentral.com Senior Editor PETER COHEN enjoys running around his backyard astride a broomstick, chasing Golden Snitches and the occasional squirrel.

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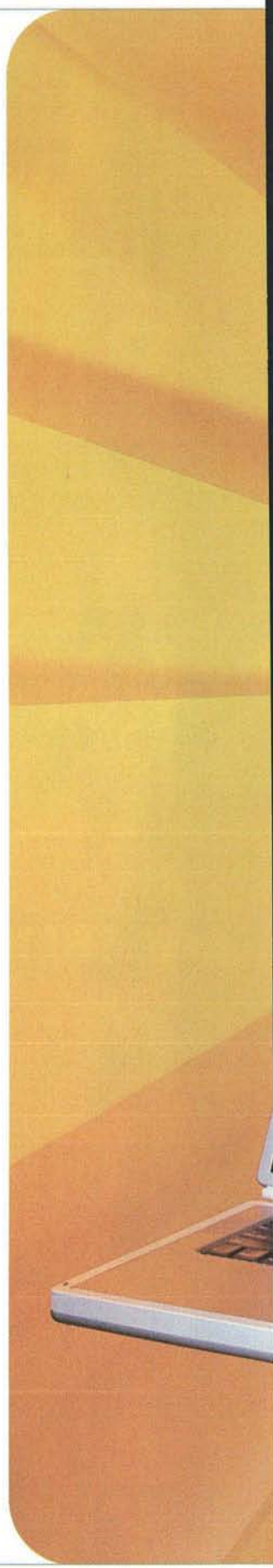
BY | JASON SNELL

The Fast Crowd

How Do Apple's Speedy New Macs Measure Up?

What a difference a few months can make. Since late 2001, Apple has updated its entire product line, making now the perfect time for *Macworld* to take stock of the latest crop of Macs.

One important update is the unique flat-panel iMac, which we review here along with Apple's other new additions: the 14.1-inch iBook and the 800MHz, 933MHz, and dual-processor 1GHz Power Mac G4s (see the reviews elsewhere in this article). And to help you understand the differences between models, Macworld Lab tested representatives from all the Mac product lines (see "Speed Skaters"). We'll also give you pointers on what to consider when deciding which new system is best for you. Read on for a look at the current world of Macs.



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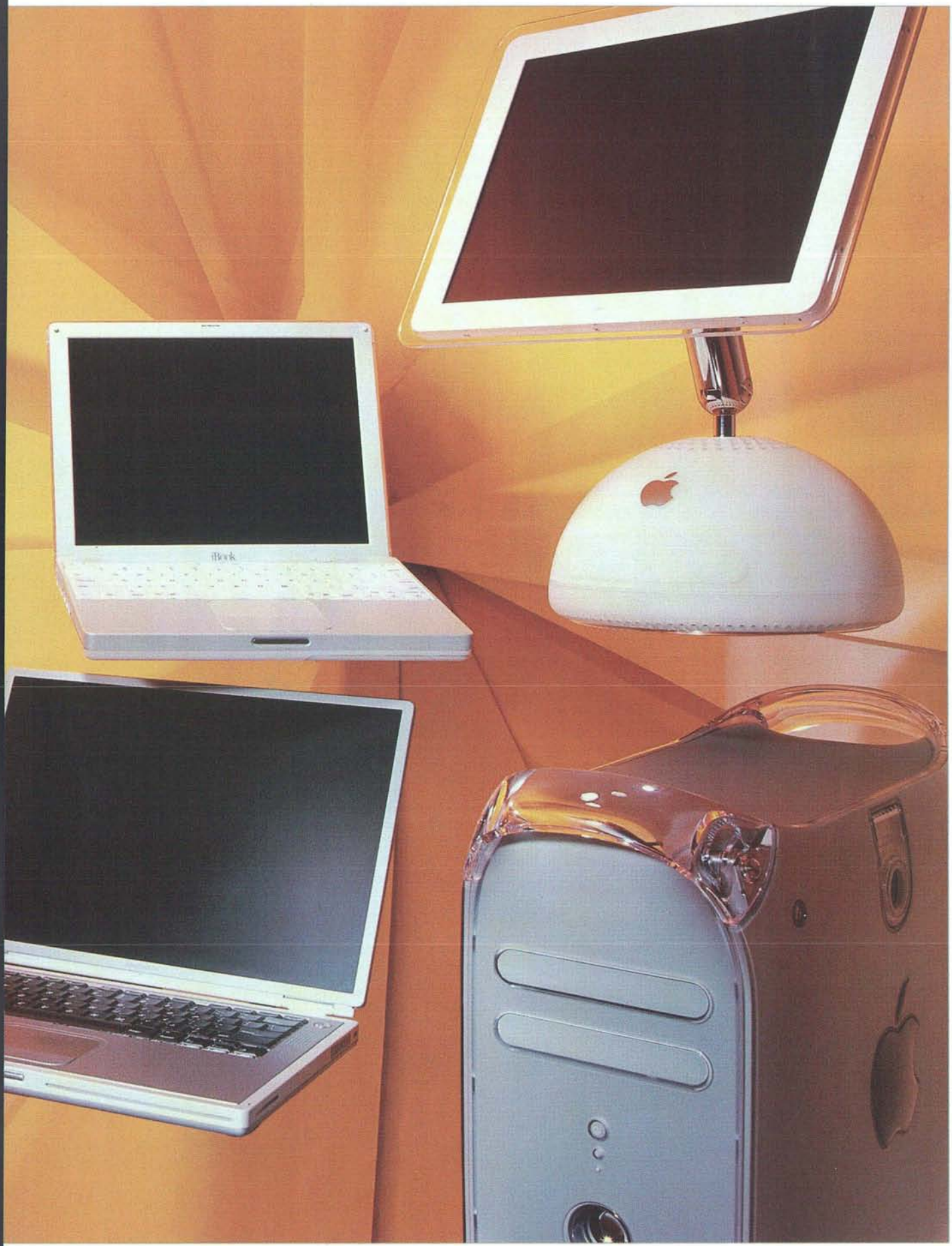


Four Seasons of Macs

Shortly after Steve Jobs's reappearance at Apple, the company divided the Mac market into four distinct segments. Today, those four areas are inhabited by the Power Mac G4, the iMac, the PowerBook, and the iBook—products broadly aimed at four different types of Mac users: professionals or consumers who need either a desktop or a laptop.

But the reality is, buying a new Mac is rarely as easy as picking which quadrant of Apple's Mac diagram you fall into. Within each product line, there can be substantial differences in price and features. The new, 800MHz iMac brings professional power to a consumer computer, but the 800MHz Power Mac G4 costs less. And although conventional wisdom says that you pay a premium for portability, Apple's laptops have a remarkable set of features, considering their prices.

Unless you're on a strict budget or just need to have the speediest Mac available, choosing the right Mac will take some careful consideration.

Speed Needs

When most people shop for a Mac, the first thing they consider is speed. And while the megahertz rating of the computer's processor is important, it isn't the only factor that determines how fast the Mac will be.

Processor Type The big difference between the G3 processor and the G4 is that the G4 has an additional,

iMAC G4/800

BOLD SYSTEM AVOIDS THE SOPHOMORE SLUMP

As the best-selling Mac of all time, the original iMac set a standard for Apple that will be tough to top. To stand a chance, the design of any follow-up iMac must be just as bold, as remarkably *different* as the original. In this respect, Apple has succeeded—its new pivoting two-piece flat-panel iMac is a triumph in terms of design, computing power, and value.

Floating Pixels

With a thin LCD attached to a circular base by a pivoting metal neck, the new iMac has a unique look. Its large size is striking—that 10.6-inch-diameter base is larger than it looks in photos. It's more the size of a bisected volleyball than a cantaloupe, and it's remarkably heavy (the whole computer weighs 21.3 pounds—most of that in the base). In contrast, the display is light and thin—it almost hovers above the base, and you can position it with just a slight push. The base's weight helps ensure that no amount of monitor positioning will tip the iMac over.

The 15-inch display's viewable area is roughly equivalent to the viewable area of a 17-inch CRT display, and its native resolution is 1,024 by 768 pixels. For all but the most palette-intensive applications, that's a perfectly acceptable amount of screen real estate. The display is a delight to use—it's bright and clear and has a wide viewing angle.

The Dome Base

The iMac's dome-shaped base is the core of the computer—a remarkable amount of equipment is crammed into a relatively small space. Apple didn't skimp on ports, either; among those on the back of the base are three USB ports, two FireWire ports, and a convenient power plug that attaches to an outlet without any intervening power brick.

Although Apple trumpets the iMac as the ultimate computer for the "digital hub," frequently attaching and detaching cables to and from the iMac gets a little frustrating. Rather than putting ports on the side or front of the iMac, Apple has hidden them on the back for aesthetic reasons. The result is a pristine white base when viewed from the front, but you may be rotating it regularly to plug in and unplug your various USB and FireWire devices.

Also on the iMac's base is a video-out port, the same one found on the dual-USB iBooks. For $19, the price of an adapter, you can attach a VGA monitor to the iMac—but the monitor can only mirror the iMac's display. Sadly, unlike the iBook, the iMac cannot output composite video for direct connection to a TV or VCR.

The iMac's base also contains a SuperDrive, which burns CDs at 8× and DVDs at 2× and reads CDs at 24×. These burn speeds aren't as fast as those of Apple's CD-RW drive, which writes CD-R discs at 24×—but by giving up that speed, you gain the ability to burn DVD-Video discs and back up your data onto 4.7GB DVD-R discs.

Unlike the drives on previous iMac models—and similar to those on newer Power Mac G4s—this drive has a powered media tray that ejects only when you press the eject key on the keyboard. The tray-based mechanism was responsive to our key presses, but the tray does stick out far enough to get in the way of the display if it's lowered too far, or the keyboard if it's using its built-in riser.

high-speed subprocessor that Apple calls Velocity Engine. Software optimized for Velocity Engine—multimedia apps such as iTunes, iMovie, Final Cut Pro, and Adobe Photoshop, for example—can realize hefty speed gains. Mac OS X itself is Velocity Engine savvy and therefore runs much better on G4 chips than on G3s. Software that hasn't been optimized for Velocity Engine runs at roughly the same speeds on G3 and G4 chips with the same megahertz rating.

Until the G5 chip arrives, Apple's product lines are pretty simple when it comes to chips: they've all got G4s, with the notable exception of the iBook (and the 500MHz and 600MHz G3 iMacs that were still for sale as of this writing). As a result, the iBook and G3 iMacs are fundamentally slower computers when it comes to Velocity Engine–enhanced software, including Mac OS X. Use an iBook running OS X for a few hours, and you'll understand: the lightweight laptop is cute and small, and you'd figure that its 500MHz or 600MHz G3 processor would be fast enough. And it is—for OS 9. But OS X simply maxes out the iBook's G3 processor. The result is a relatively new Mac that *feels* as if it were already a few years out of date. If you plan on running OS X, you should consider avoiding G3-based Macs.

Bus and Cache Two lesser-known but key factors also affect the speed of your Mac: bus speed and cache (for details, see "Does MHz Matter?" July 2001). The system-bus speed determines how fast your Mac's proces- >>

MAC OS X IS MULTIPROCESSOR SAVVY, INNATELY TAKING ADVANTAGE OF A DP MAC'S SECOND PROCESSOR.

Neck and Neck

Connecting the base and the display is the iMac's neck, a pivoting stainless-steel tube so strong that Apple recommends using it to lift and carry the iMac. The neck lets you raise or lower the monitor across a 7-inch range, swivel it 180 degrees, and pivot it to point from 5 degrees downward to 30 degrees upward.

Longtime computer users might scoff at those numbers and question just how often people really need to reposition their displays. But once we started repositioning the display, we couldn't stop. Working with this computer over the course of many hours, we found ourselves positioning it to match our movements. Rather than sitting still to get a good view of the display, we were able to move around and adjust the display to suit various positions. And when you want to show something on your screen to others, it's great to be able to rotate the screen to face them, rather than asking them to sit down in your chair to take a gander.

G4 Speed

In addition to the radical design update, this new iMac has a key feature its predecessor lacked: a G4 processor. Macworld Lab's test results show that the new iMac is clearly faster than its top-of-the-line predecessor, the 700MHz G3-based iMac. The new iMac was 18 percent faster in our Speedmark tests, which measure overall system performance. And in processor-intensive Photoshop and iTunes tests, the new iMac was 67 percent and 68 percent faster, respectively, than the 700MHz G3 iMac. In our Quake test, which highlights the speed of the iMac's processor and powerful new Nvidia GeForce2 MX video processor, the new iMac was 40 percent faster.

However, despite the major speed boost, it's important to remember that the iMac still does not offer the performance of a Power Mac G4. Equipped with a faster system bus, the entry-level 800MHz Power Mac G4 was faster than the iMac in all our tests (see "Speed Skaters" for details).

OS X Native

Generally, using the iMac was a pleasure. It was speedy and responsive in most situations, although the Mac OS X version of iMovie was more sluggish than we'd expected it to be on a G4 machine.

The iMac's included software is a solid collection, and all the programs run natively in Mac OS X—which makes sense because the iMac boots by default into Apple's new operating system. Programs such as the game Otto Matic, World Book Encyclopedia, iPhoto (which we had to install ourselves from a separate CD-ROM), and iDVD worked without a hitch.

We did, however, run into a few quirks during our testing. For example, the iMac went to sleep repeatedly when we used iMovie to capture video from a FireWire-connected digital camcorder—a problem that forced us to turn off all sleep features in OS X's System Preferences application.

It's fair to point out that, as the very first edition of a new product design—and one using a brand-new operating system, to boot—this iMac may have several of these small quirks. That's the price users have always paid for being on the cutting edge of new technology. Still, our time with this iMac was almost entirely pleasurable.

Macworld's Buying Advice

Apple's new iMac is a high-style device that seems to be bound for art galleries and design museums. But more important than its form is its function: it's fast enough for demanding Mac users, and it has a large-enough display that's clear and easy on the eyes.

All this power and style comes at a price—the $1,799 iMac is a far cry from a sub-$1,000 consumer Mac for the masses. But given its performance, display, and attractive design, this new iMac will definitely appeal to Mac users who don't need the expansion options that a full-fledged Power Mac G4 offers.—JASON SNELL

RATING: ♦♦♦♦½

PROS: Adjustable display; fast G4 processor; built-in SuperDrive; small footprint; innovative design.

CONS: All ports on back of base; no composite-video–out port or support for unmirrored displays; not as fast as Power Mac G4 with same processor speed.

PRICE: $1,799

COMPANY: Apple Computer, 800/692-7753, www.apple.com

<< sor talks to your RAM; the faster the bus speed, the better. The 500MHz iBook has the slowest system bus: 66MHz. The 600MHz iBook, the 550MHz PowerBook G4, and the G3 and G4 iMacs all feature 100MHz buses. The fastest system bus is the 133MHz bus found in the 667MHz PowerBook G4 and the entire Power Mac G4 line. (Note that RAM modules are rated for specific system-bus speeds, so you can't use old RAM in a new Mac with a faster bus speed.)

Cache RAM doesn't rely on the system bus to communicate with the processor—it's got a direct connection, allowing it to feed data to your Mac's processor without any speed constraints. These days, every Mac processor has Level 2 (L2) cache built in, putting 256K of ultrafast memory at the processor's disposal. But the 933MHz and dual-processor 1GHz Power Mac G4s go one better by also offering *Level 3* (L3) cache—an additional 2MB of RAM that's slower than the L2 memory but can still offer serious performance boosts. This is especially noticeable in situations where a lot of data is being calculated by the processor, such as when you're modifying an image with a Photoshop filter.

Multiprocessing For a long time, a Mac with more than one processor inside was a curiosity, something used only by graphics or video pros with software designed to take advantage of extra processors. But Mac OS X is multiprocessor savvy, innately taking advantage of the power of a DP Mac's second processor. As a result, multiprocessing is beginning to enter the mainstream. The only Mac model to offer multiple processors is the Power Mac G4, and the situation is likely to stay that way. If you really need speed, a multiprocessor system running Mac OS X will blow any single-processor Mac away.

Expandability Options

The new, G4 iMac and the G4 PowerBook are, without a doubt, powerful and speedy computers—and the

NEW POWER MACS

800MHZ, 933MHZ, AND DUAL-1GHZ G4 SYSTEMS ARE SOLID PERFORMERS

Mac users understand the megahertz myth—they know that a PowerPC G4 chip equipped with Velocity Engine can run rings around a Pentium processor with the same clock speed—but we always want higher processor-speed numbers. And we *definitely* want Macs that break the gigahertz barrier—for psychological reasons and for the increased performance these Macs deliver. With Apple's latest tweaks to its desktop lineup, Mac users can finally get there—twice over, no less—and at a breakthrough price. The surprise is that Apple's other new Power Macs are just as impressive, in their own ways.

Meat and Potatoes

The new Power Mac G4 desktop lineup is fairly simple, with few changes—beyond processor-speed increases and new graphics cards—to last summer's lineup. There are three configurations.

- The 800MHz model ($1,599) has 256MB of RAM, a 40GB hard drive, a 24×10×40× CD-RW drive, and an ATI Radeon 7500 graphics card.
- The 933MHz model ($2,299) has 256MB of RAM, a 60GB hard drive, a SuperDrive, an 8×4×24× CD-RW drive that can also burn DVD-R discs at 2×, and an Nvidia GeForce4 MX graphics card.
- The dual-processor model ($2,999) has two 1GHz chips, 512MB of RAM, an 80GB hard drive, a SuperDrive, and an Nvidia GeForce4 MX graphics card.

All the machines have a 133MHz system bus (the fastest on the platform), four PCI slots, three DIMM slots (that can support as much as 1.5GB of RAM), a Gigabit Ethernet connector, two USB 1.1 ports, two FireWire ports, a 56K modem, a headphone jack, and a digital speaker jack. Out of the box, each new Power Mac can support two displays (one VGA and one ADC), although to use a second flat-panel display with the stock video

card, you'll need an adapter such as Dr. Bott's $150 DVIator (877/611-2688, www.drbott.com).

Each model offers space for three additional 3.5-inch UltraATA hard drives; two drives can be added without any extra equipment, and you'll need a PCI-based ATA card if you want to fully populate the system. (The current desktop architecture does not support an additional 5.25-inch removable drive, so you cannot add a second CD-RW or DVD drive to your Power Mac.)

Performance

A faster system bus, speedier processors, and high-performance graphics cards should make the updated Power Macs outperform

Power Mac G4 can't match the first's low price or the second's portability. When you're deciding whether you should buy a traditional, desktop computer such as the Power Mac G4, one of the most important factors to keep in mind is expandability. (To learn more about the differences between desktop and portable Macs, see "Time to Desert Your Desktop?" January 2002.)

Expansion Slots The Power Mac G4 is by far the most expandable computer Apple offers—it's the only one to provide PCI slots (four of them) and a fast AGP slot (occupied by its video card).

If you must use SCSI devices, work on high-end video projects, or do anything else that requires installing PCI cards rather than adding peripherals via USB or FireWire, the Power Mac G4 is your only option.

If you also need a portable Mac, the PowerBook G4 does offer a single PC Card slot—which is more than either the iBook or iMac can boast. With it you can add a digital sound card, a media reader, or even additional storage.

RAM You can add RAM to all Macs, but some systems are more flexible than others. The iBook is limited to 640MB of RAM; the PowerBook G4 and the G3 and G4 iMacs can handle as much as 1GB of RAM; and the Power Mac G4 can hold a staggering 1.5GB of RAM. (Generally speaking, you'll save money by buying additional RAM from a third party instead of having Apple add it when you purchase your computer.)

But there's more than just the amount of RAM involved. The iBook's included RAM is soldered directly to the motherboard and cannot be replaced, although there's a single slot for additional RAM. Both the iBook and the PowerBook use Small Outline (SO) RAM modules. The new iMac's built-in memory is full-size but difficult to get to—the expansion slot uses the SO RAM as well. And the Power Mac G4 has three slots for full-size RAM. >>

YOUR MAC'S GRAPHICS CHIP DETERMINES HOW QUICKLY IMAGES ARE DRAWN ON YOUR SCREEN.

any other available Mac, and our testing bore this out. Even the entry-level desktop, which uses the same 800MHz G4 processor found in the new iMac, was between 5 and 10 percent faster than the equally equipped iMac in most operations, including Macworld Lab's Speedmark test, a measure of real-world performance (see "Speed Skaters" for details).

The entry-level Power Mac offers decent performance for its price, but if you're looking for real performance boosts, you'll want to turn to the 933MHz and dual-processor 1GHz systems. In those models, Apple incorporated a fast 2MB L3 cache (in addition to the G4's standard 256K L2 cache), which keeps the processor running at peak efficiency during data-intensive calculations.

Our benchmark tests show the value of that L3 cache. Despite the fact that the 933MHz G4 processor itself is roughly 17 percent faster in megahertz than the 800MHz G4 processor, the 933MHz machine actually ran 20 to 40 percent faster than the 800MHz desktop in our basic tests. The dual-processor model, with a base processor that's 25 percent faster than the 800MHz chip, turned in times that ranged from 35 to 50 percent faster than the 800MHz G4 in the basic tests, and it was a whopping 166 percent faster in the Quake test (where it was aided by its faster graphics card).

The dual-processor system is an awesome machine, especially when you consider that its predecessor, which sported two 800MHz processors, cost $500 more—and had half the RAM, a smaller-capacity hard disk, and a lesser video card. And performing day-to-day tasks in OS X, the 1GHz Power Mac felt like what it is, the fastest Mac on the planet—extremely responsive and very zippy.

Different Faces

These new Power Mac G4s are all solid performers. There's little for us to complain about in the Power Mac line. It would be nice to have support for faster UltraATA drive specs and an additional 5.25-inch drive bay, for example, but those are minor quibbles.

Each of these new G4 towers will appeal to a different audience. The entry-level, 800MHz model is the least attractive of the bunch, given that you can get a similarly configured iMac, with a screen, a larger hard drive, and a SuperDrive, for $200 more. However, if you require the expansion capabilities, already have a display (or want dual-display support), or need the slightly better speed the Power Mac offers, the entry-level Power Mac is a decent, but not stellar, buy.

The 933MHz and dual-1GHz desktops offer much more in terms of price and performance, especially when you factor in the extras: the SuperDrive, the GeForce4 MX video card, L3 cache, and larger-capacity drives. At $2,299, the 933MHz Power Mac comes equipped to take on most tasks with gusto; it's an excellent machine for its price, and it's the real sleeper in the current lineup.

The high-end model, the dual-processor 1GHz Power Mac, is a good value even at $2,999; it easily outperforms the pricier dual-processor 800MHz Power Mac released last summer. Sure, you'll pay a little more for Apple's top-of-the-line system, but you'll also get an incredibly powerful machine that does everything you need.

Macworld's Buying Advice

Let the iMac take center stage, with its all-in-one design and its flat-panel display; the real star of Apple's product line is still the desktop towers—excellent expansion, performance, and flexibility are still the standards that professionals require of their Macs.—RICK LEPAGE

Max Power

PRODUCT	MOUSE RATING	PRICE	PROS	CONS
Power Mac G4/800	4 mice	$1,599	Solid performance; strong expansion options.	Could use some minor architectural improvements.
Power Mac G4/933	4½ mice	$2,299	Excellent performance; strong expansion options; best value in desktop line.	Could use some minor architectural improvements.
Power Mac G4/1GHz DP	4½ mice	$2,999	Fastest Mac available; strong expansion options.	Could use some minor architectural improvements.

Expansion Space The cavernous Power Mac G4 also offers space for several internal hard drives and has two drive bays; by default, one is filled (with a CD-RW drive or SuperDrive). That makes it easy to add extra hard drives and other half-height peripherals, such as a tape or Zip drive. (Technically, it's not a SuperDrive unless it comes with your Mac, but you can buy a Pioneer DVD-R drive like the ones Apple uses for its SuperDrive, and you can install it yourself.)

The Power Mac G4's accessibility also means that swapping hardware is easier. For example, if you're tired of your small, slow hard drive, you can easily remove it and replace it with a large, faster one. You can even pull the stock CD-RW drive out of a low-end Power Mac G4 and swap in a Pioneer DVD-R drive.

Consider Your Needs When it comes to expandability, the question is, do you need it? If your internal hard drive fills up, you can always add an external FireWire drive. And only the hardest-core graphics and multimedia types really need more than a gigabyte of RAM. It's nice to have options, but if you didn't swap hard drives out of, or add oodles of RAM to, your last Mac, you might be fine with a laptop or an iMac.

Display Options

One area where Apple's Mac models differ substantially is video: each system comes with different video hardware and different options for external monitors.

Video Card Your Mac's graphics chip determines how quickly images are drawn on your screen—especially

14.1-INCH iBOOK

A LARGER SCREEN ADDS HEFT AND SIZE

When it was introduced, Apple's redesigned iBook was remarkable for its small size and light weight. The new, larger edition of the iBook, which features a 14.1-inch LCD screen, is just that: a revision of the product that adds screen size at the expense of the very advantages that made the laptop so appealing in the first place.

Big Screen, Same Pixels

In contrast to the smaller iBooks' 12.1-inch screen, this new iBook offers a 14.1-inch screen that will please those who found that type on the earlier iBooks was just too small to be readable. Although this new screen is larger, it's got the same maximum resolution of 1,024 by 768 pixels. That means there's no new screen real estate to be gained here—it's just that every pixel on the screen is larger than on the 12.1-inch iBooks.

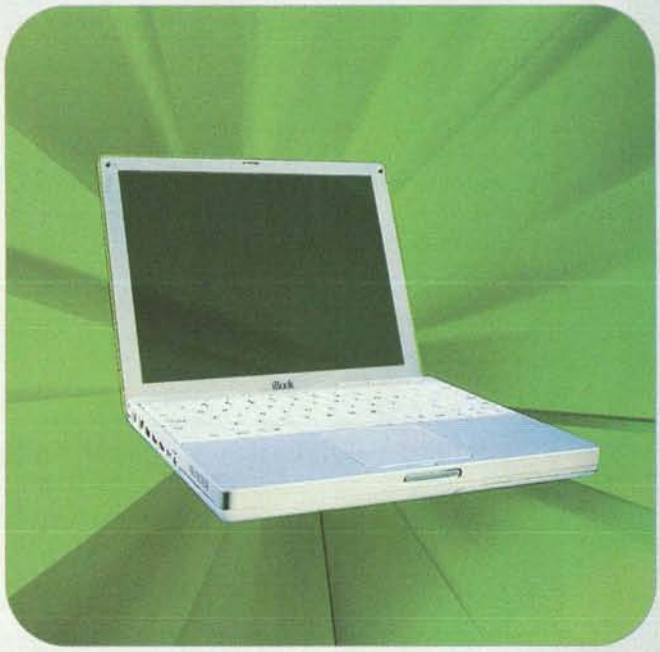
However, to fit the 14.1-inch screen in the iBook, Apple has had to expand the laptop's dimensions. This larger iBook has the same 1.35-inch thickness as the smaller models, but its other dimensions—12.7 by 10.2 inches—are almost exactly the same as those of Apple's old PowerBook G3 and noticeably larger than the smaller iBooks' 11.2-by-9.1-inch dimensions.

More Battery, More Weight

Once Apple's engineers had expanded the iBook, they had some room to expand its battery as well. This new battery is rated by Apple to provide an hour more life for the iBook than the battery in the smaller, 12.1-inch models. But this new battery, combined with the added girth of this iBook, brings the weight of the computer to 6 pounds, making it more than half a pound heavier than the Titanium PowerBook G4 and more than a full pound heavier than the smaller iBooks.

Macworld's Buying Advice

The shiny Titanium PowerBook G4 edged the popular PowerBook G3 out of Apple's product line, but not to worry—the new 600MHz G3 14.1-inch iBook is essentially an all-white version of that all-black laptop, in both size and weight. This new laptop



lacks the small size and light weight that made the 500MHz and 600MHz 12.1-inch iBooks so alluring, and it can't match the power of the G4 processor in the PowerBook.

As a result, the 14.1-inch iBook is likely to have limited appeal—but if you don't want to pay an extra $500 for the performance of the Titanium PowerBook G4, and you don't mind sacrificing compactness and lightness for a larger, easier-to-read screen, this new iBook may be for you.—JASON SNELL

RATING: ♦♦♦½

PROS: Longer battery life than smaller iBooks; bright, easy-to-read screen.

CONS: Heaviest current Apple laptop; lacks compact size of smaller iBooks.

PRICE: $1,799

COMPANY: Apple Computer, 800/692-7753, www.apple.com

relevant if you're working on 3-D graphics, playing games, or running monitors at high resolutions. Video cards are powered by processors and fed by RAM; both affect speed (see "Speed Skaters" for more information). Apple's two top Power Mac G4s are powered by the 64MB Nvidia GeForce4 MX, the most powerful standard graphics processor in the Apple line. You can also custom configure your Power Mac G4 with the Nvidia GeForce4 Titanium, replete with a whopping 128MB of RAM—the most on any Mac video card. (For more on specs, see "Apple's Starting Lineup.")

Generally, the faster and more expensive a Mac is, the better its video performance is—though laptops are typically underpowered compared with desktops—both in speed and in the monitor resolutions they can support.

In addition, the Power Mac G4 is the only Mac that comes with an actual video card; the rest have integrated video chips. This means that you can upgrade the Power Mac G4's video subsystem by swapping in a new AGP card; with the other systems, what you buy is what you'll always have.

Output Options If you want to use a specific monitor, or if you need more than a single monitor hooked up to your computer, you should consider only some of these Mac models. The Power Mac G4, by dint of its being the only Mac sold without a built-in display device, gives you the most options: you can equip it with a flat-panel or CRT display (although Apple no longer makes CRTs). Apple's latest video cards even allow you to hook up one of each; the flat panel connects via Apple's proprietary ADC connector, while the CRT monitor uses a standard VGA port. Converters are also available if you want to connect a non-Apple (DVI) flat panel (for more on displays, see "*Macworld*'s Ultimate Buyers' Guide: Monitors," February 2002). Since the Power Mac also offers several open PCI slots, adding even more monitors (or composite video out, for a TV set) is just a matter of adding a card.

The PowerBook G4 comes with a stunning flat-panel display, but its graphics chip is savvy enough to drive a separate external monitor, letting you have two screens' worth of real estate when you're at your desk—via VGA, S-Video, or (with an adapter) composite video.

Apple's consumer Macs are far more limited in their video options. Both the iBook and the iMac have an LCD panel built in, and via a monitor adapter (included with the iBook; $19 extra with the iMac), you can attach an external VGA display. But that display can only mirror the action on your main screen, not extend your workspace—and it's limited to a maximum resolution of 1,024 by 768 pixels, though you can shrink it down to as low as 640 by 480 if you so desire. The iBook comes with a composite-video–out port (it's the same port as the headphone jack); with a $19 adapter, you can hook it up to a TV set or other composite display. The iMac has no such composite-out features.

THE POWER MAC G4 IS THE ONLY MAC SYSTEM WITH AN ACTUAL VIDEO CARD; THE REST HAVE INTEGRATED VIDEO CHIPS.

The Last Word

Which Mac is right for you? If you don't think you'll need to add PCI cards or an additional monitor, and if you don't need the fastest Mac around to do processor-intensive work, the new iMac is an appealing option. If you need a portable Mac, the PowerBook G4 puts the strength of a Power Mac G4 in a compact >>

Speed Skaters

The G4 processor in the new iMac and the lightning-fast chips in the new Power Macs will mean big speed improvements all around. The bigger iBook, however, is just that—it offers only a larger screen.

Macworld LAB TEST	Speedmark 3.1	Adobe Photoshop 6.0.1	iMovie 2.1.1	iTunes 2.0.3	Quake III v1.30b1
	OVERALL SCORE	SUITE	RENDER	MP3 ENCODE	NORMAL
Apple iBook G3/600 (12.1-inch)	**100**	**81**	**102**	**125**	**24**
Apple iBook G3/600 (14.1-inch)	**99**	**81**	**102**	**128**	**24**
Apple iMac G4/800	**140**	**38**	**63**	**63**	**56**
Apple PowerBook G4/667	**129**	**46**	**75**	**75**	**50**
Apple Power Mac G4/800	**157**	**35**	**59**	**60**	**66**
Apple Power Mac G4/933	**197**	**28**	**44**	**43**	**88**
Apple Power Mac G4/1GHz DP	**213**	**22**	**37**	**30**	**150**
Apple iMac G3/700	***119***	***69***	***87***	***106***	***40***
Apple Power Mac G4/800 DP	***186***	***27***	***47***	***36***	***112***
Apple Power Mac G4/867	***184***	***33***	***48***	***47***	***78***
	> Better	**< Better**	**< Better**	**< Better**	**> Better**

BEST RESULTS IN **BOLD**. REFERENCE SYSTEM IN *ITALICS*.

Speedmark scores are relative to those of a 500MHz iMac (Flower Power), which is assigned a score of 100. Photoshop, iMovie, and iTunes scores are in seconds. Quake scores are in frames per second. We tested each system with Mac OS X 10.1.2 installed and 256MB of RAM (except for the dual-1GHz Power Mac and the PowerBook G4/667, which ship with 512MB). We set displays to 1,024-by-768-pixel resolution and 24-bit color. For the Photoshop Suite test (which runs in the Classic environment), the systems were upgraded to 512MB of RAM (384MB on the iBooks); the test is a set of five scripted tasks using a 50MB file. Photoshop's memory partition was set to 200MB and History was set to Minimum. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long, converting it from the hard drive using iTunes' Better Quality setting of 160 Kbps. We tested Quake III at a resolution of 640 by 480 pixels with graphics set to Normal. For more information on Speedmark, visit www.macworld.com/speedmark.—MACWORLD LAB TESTING BY ULYSSIS BRAVO

Apple's Starting Lineup

PRODUCT	PRICE	BASE RAM	MAX RAM	HARD DRIVE	BUS SPEED	OPTICAL DRIVE	GRAPHICS CHIP/RAM	FIREWIRE/ USB PORTS	NOTES
iBook G3/500	$1,199	128MB	640MB	15GB	66MHz	CD-ROM	ATI Rage Mobility 128/8MB	1/2	4.9 pounds
iBook 12.1-inch G3/600	$1,499	128MB	640MB	20GB	100MHz	combo	ATI Rage Mobility 128/8MB	1/2	4.9 pounds
iBook 14.1-inch G3/600	$1,799	256MB	640MB	20GB	100MHz	combo	ATI Rage Mobility 128/8MB	1/2	6 pounds, 6-hour battery
PowerBook G4/550	$2,299	256MB	1GB	20GB	100MHz	combo	ATI Mobility Radeon/16MB	1/2	5.4 pounds, PC Card slot
PowerBook G4/667	$2,999	512MB	1GB	30GB	133MHz	combo	ATI Mobility Radeon/16MB	1/2	5.4 pounds, PC Card slot
iMac G3/500	$799	128MB	1GB	20GB	100MHz	CD-ROM	ATI Rage 128/16MB	2/2	15-inch CRT
iMac G3/600	$999	256MB	1GB	40GB	100MHz	CD-RW	ATI Rage 128/16MB	2/2	15-inch CRT
iMac G4/700 (CD-RW)	$1,299	128MB	1GB	40GB	100MHz	CD-RW	Nvidia GeForce2 MX/32MB	2/3	15-inch LCD
iMac G4/700 (SuperDrive)	$1,499	256MB	1GB	40GB	100MHz	SuperDrive	Nvidia GeForce2 MX/32MB	2/3	15-inch LCD, pro speakers
iMac G4/800	$1,799	256MB	1GB	60GB	100MHz	SuperDrive	Nvidia GeForce2 MX/32MB	2/3	15-inch LCD, pro speakers
Power Mac G4/800	$1,599	256MB	1.5GB	40GB	133MHz	CD-RW	ATI Radeon 7500/32MB	2/2	four PCI slots
Power Mac G4/933	$2,299	256MB	1.5GB	60GB	133MHz	SuperDrive	Nvidia GeForce4 MX/64MB	2/2	2MB L3 cache, four PCI slots
Power Mac G4/1GHz DP	$2,999	512MB	1.5GB	80GB	133MHz	SuperDrive	Nvidia GeForce4 MX/64MB	2/2	2MB L3 cache, four PCI slots

<< carrying case. The smaller iBook has smallness and lightness going for it, but it and its larger sibling are the slowest computers in the Apple family. And then there's the Power Mac G4 line itself—these machines may not be portable, but they are powerful and expandable.

It's a good time to be a new Mac owner. As long as you keep your needs in mind when you're deciding, you're bound to find the right Mac for you. If you were to force us to choose, we'd say that the iMac G4 and the PowerBook G4 are the most appealing computers in Apple's product line. But these products make the choice very tough. □

Editor JASON SNELL has been buying Mac hardware for 12 years and writing about it for 8.

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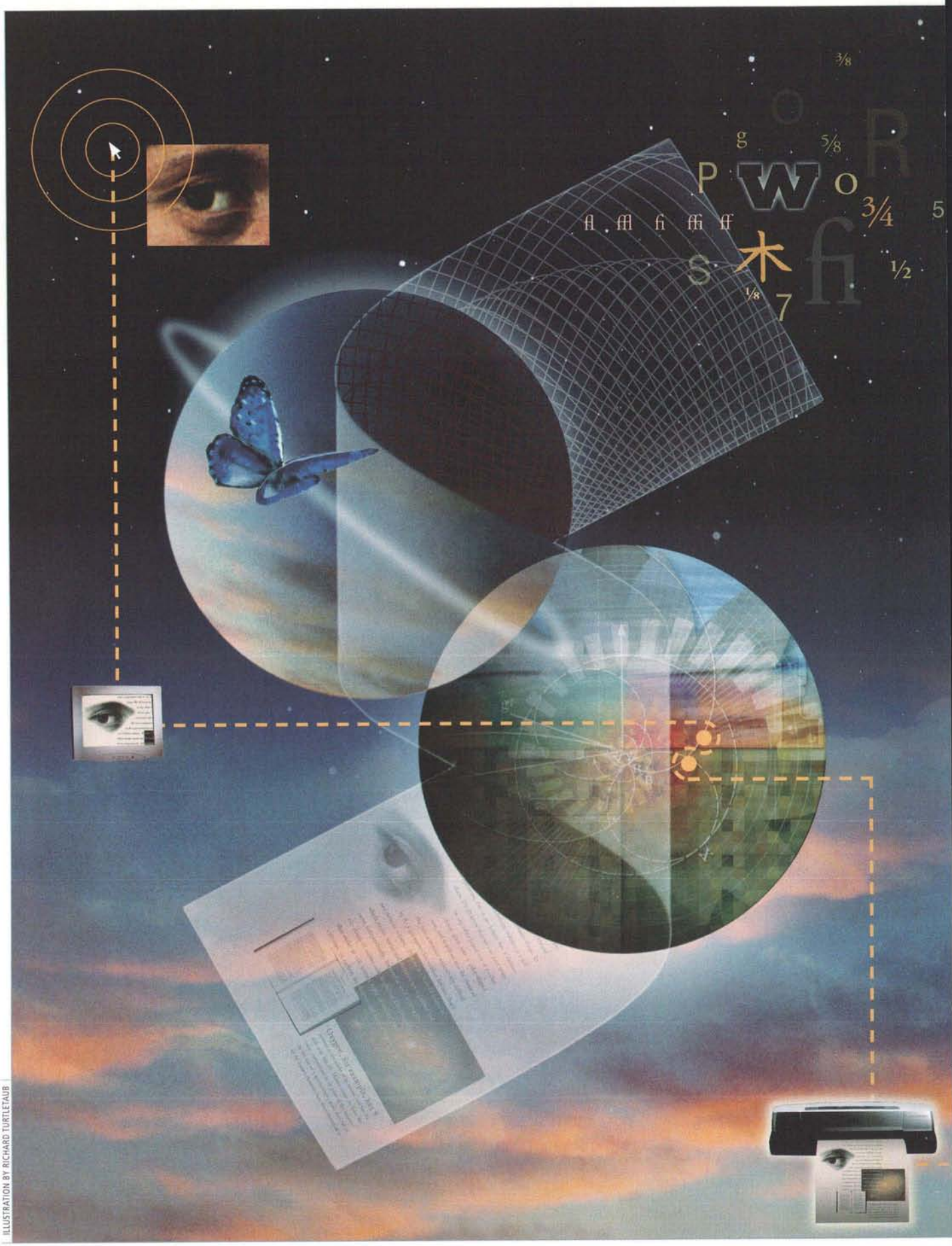


ILLUSTRATION BY RICHARD TURTLETAUB

BY | DAVID BLATNER

QuarkXPress versus InDesign

The New Versions Are Out. Which Will Win the Hearts of Designers?

Most print designers and prepress professionals use QuarkXPress 3.X or 4.X—not because XPress is a flawless program, but because its features, familiarity, and prevalence make it cost-effective. Although Adobe tried to break into the high-end page-layout market with InDesign 1.0 and 1.5, few users took a chance on the new program.

Then, last February (within a week of each other), Quark (800/676-4575, www.quark.com) and Adobe (800/833-6687, www.adobe.com) shipped XPress 5.0 and InDesign 2.0, respectively. I explored the new features of each program before they were complete (see "Quark's Leap of Faith," October 2001, and "InDesign Takes Flight," January 2002). Now that I've examined the final versions, I've come to some surprising conclusions. This comparison of the programs' primary components should help you decide whether to upgrade—or to switch.

While InDesign 1.X was clearly an immature product, version 2 offers compelling capabilities and is significantly faster than its predecessor; it can accomplish almost everything QuarkXPress 5 can (although InDesign lacks XPress's new Web-design tools, which I'll discuss later).

Of course, there are plenty of XTensions that expand XPress beyond InDesign's capacity, and there are several plug-ins that allow InDesign to perform tricks unheard of in XPress. However, this comparison focuses on each program's core capabilities.

<< Mac OS X Support

One of the greatest disappointments in XPress 5 is that it doesn't run natively in OS X—and InDesign 2 does. Quark has announced that the next version will be OS X native, but there's no indication of when this version will see the light of day.

Though InDesign's features are the same whether it's running in OS 9.2 or in OS X, OS X users can take advantage of better memory management and crash protection. In addition, InDesign runs slightly faster in OS X than in OS 9. You can run XPress 5 in OS X's Classic mode, but it was slower in Classic than XPress 4.1 running in OS 9.2. (Most apps are slower in Classic than in OS 9.)

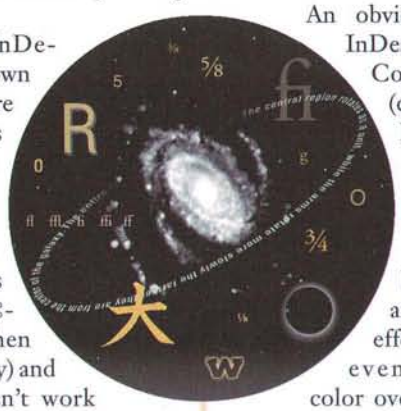
Of course, the absence of an OS X–native version of Photoshop has kept many publishers from switching to OS X, but Photoshop 7.0 should be available by the time you read this. When publishers do migrate to OS X, they'll find that InDesign is the clear winner in this operating system.

General Interface

XPress's strength—and its weakness—is that its interface has hardly changed in a decade. While you can learn your way around this upgrade in no time, you'll have to endure the same limitations you've learned to live with.

InDesign 2 doesn't have many of XPress's limitations. With InDesign, you can perform multiple undos, redefine style-sheet definitions based on changes you've made to a page, select a guide and then use the keyboard to position it, and merge two stories by linking their text boxes.

Of course, InDesign 2 has its own quirks. There are too many palettes to manage easily, and the keystroke that activates the Grabber Hand tool is clunky (press ⌘-spacebar and then let go of the ⌘ key) and sometimes doesn't work in OS X. In addition, InDesign 2 can't automatically add and link pages while you type. But this version does fix the most-egregious interface issues of InDesign's first iterations—for example, the tendency of palettes to display text attributes incorrectly after scaling text frames.

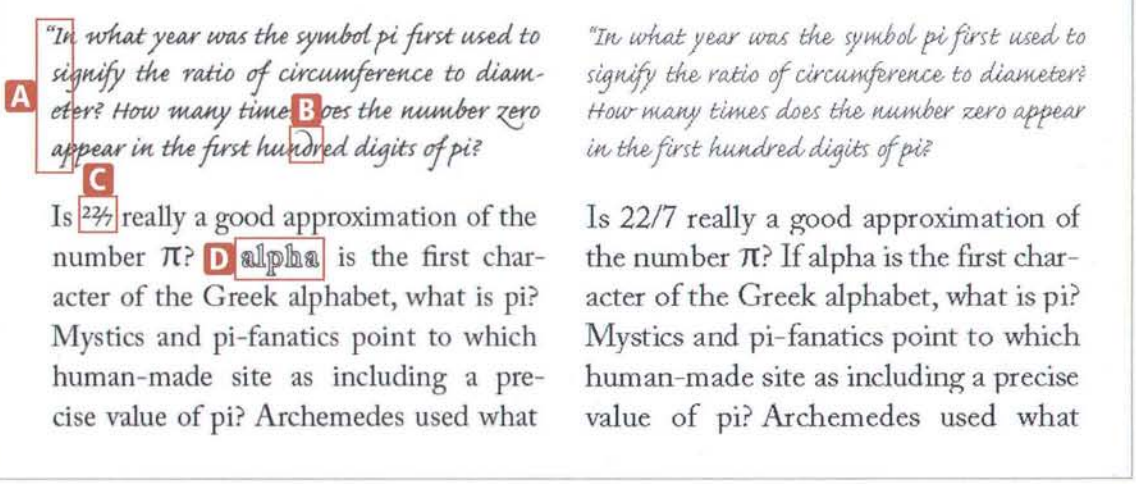


Typography

In 1990, QuarkXPress 3.0 boasted cutting-edge typographic control. Sadly, most of XPress's type tools haven't changed significantly since then. Today, it's InDesign that offers state-of-the-art typography.

There is little that you can do with type in InDesign that you can't do in XPress; however, you have to work much harder to achieve the same results in XPress. An obvious example is InDesign's Paragraph Composer feature (called the Multiline Composer in previous versions); it adjusts hyphenation and the spacing between letters and words, in an effort to achieve an even typographic color over a whole paragraph. In contrast, XPress looks at only one line of text at a time, so a paragraph's color is often not quite even (see "Tip-Top Type").

A subtler example of InDesign's superiority is its greater support of OpenType fonts (available from Adobe and several other foundries), which can include special charac-



Tip-Top Type QuarkXPress's original claim to fame was its powerful typographic control, but Adobe InDesign (left) now offers significantly more type features—for example, hanging punctuation A, automatic swashes B, fractions (with OpenType fonts) C, and strokes around text D. And InDesign's Paragraph Composer feature bases hyphenation and spacing on the look of a whole paragraph, instead of taking into account only one line at a time (which is how XPress does it). XPress just can't compare (right). However, even with InDesign 2's speed enhancements, the program's type features require a fast machine.

ters such as fractions, swashes, foreign-language characters, and even context-sensitive ligatures. For example, say your OpenType font includes a specially drawn *tt* combination. InDesign 2 can automatically find and insert the *tt* ligature as you type the letters.

InDesign 2 has a plethora of other timesaving type features, such as hanging punctuation slightly outside the margins of justified text, and optical kerning to automatically adjust spacing between characters (based on their shapes)—both were also available in version 1.X. XPress provides neither of these features.

Adobe has also fixed a number of problems that irked InDesign 1.X users. For example, you can now set text leading (the space between baselines) for an entire paragraph at a time, and text can now wrap accurately around EPS graphics. One problem remains: you can't select a text character and set it to a dingbats font.

XPress 5 has no new typography tools, though it lets you specify a color in the Find/Change dialog box and check the spelling of a selection. InDesign also has these features.

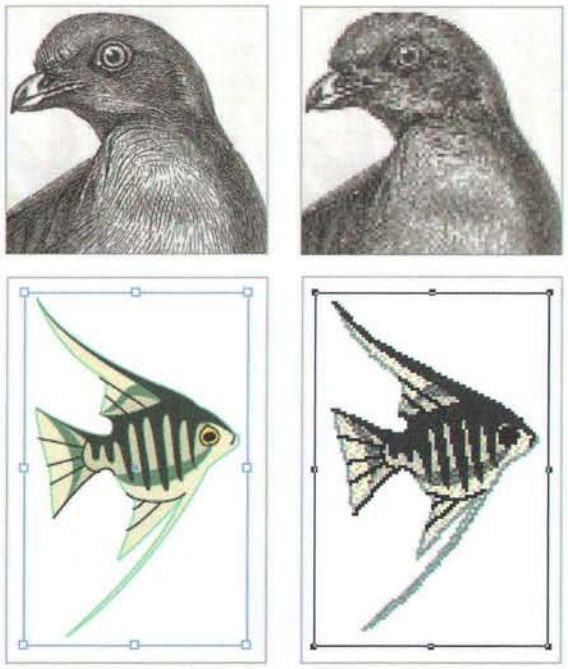
World Languages Typesetting in languages other than American English is increasingly important in today's international business culture, and InDesign shines in this area, too. It ships with dictionaries for 12 languages, so if you can type it, InDesign can hyphenate it properly and check its spelling. InDesign is also Unicode compliant, so you can open Japanese documents in the English version of the program. XPress, on the other hand, can manage only one language at a time; to do multilingual publishing, you need QuarkPassport, which looks and feels like XPress but costs almost twice as much.

Graphic Support

In any language, pictures are as important as type, and here, too, the scales tip in InDesign's favor. Both programs handle TIFF, JPEG, EPS, and other popular file formats. However, InDesign also supports native Adobe Illustrator and Photoshop files, which can be helpful in some workflows. More importantly, InDesign offers significantly better screen previews of your graphics—even of EPS files, which have traditionally been almost impossible to view properly on screen (see "Picture Perfect").

XPress 5 provides better-looking screen previews of TIFF images than XPress 4.X, but while InDesign lets you zoom in to see the true resolution, XPress is still limited to a 72-dpi screen preview. In addition, a five-page document with two large images per page creates a 50MB file in XPress 5 but only a 10MB file in InDesign 2.

There are a few graphics features unique to XPress, including the ability to edit the contrast curve of imported JPEG and TIFF images, and the option of allowing images to break past the borders of their picture boxes. (Both of these were also in version 4.X.)



Picture Perfect InDesign 2 crisply renders both TIFF and EPS files (left). XPress 5 pixelates both formats (right).

Color

InDesign 2 has slightly better color control than version 1.X; it allows you to drag and drop color swatches. However, XPress still has more features, especially when it comes to spot colors. InDesign can't create multi-inks for blends of spot colors, for example.

Managing Color Everyone wants more-consistent color from scan to screen to ink-jet printer to printing press, but few people enjoy getting their hands dirty with arcane color-management technologies. Fortunately, both Quark and Adobe have tried to make managing color as accessible as possible.

XPress 5 sports a new, more intuitive color-management dialog box and can specify rendering intents (or how the program should handle out-of-gamut colors). InDesign 2 has only a few new color-management tools (such as the Overprint Preview option), but its color-management system is still significantly better than XPress's. InDesign not only displays TIFF and JPEG images better but also shares its underlying display technology with Illustrator and Photoshop, so you can get more-accurate color from one program to the next. And InDesign's Overprint Preview feature makes some basic color management possible even when color management is turned off.

XPress does offer one color-management possibility that InDesign doesn't: hexachrome printing. But only a small number of people take advantage of this specialized ink choice.

Page Layout

Page-layout programs have to balance ease of use with powerful tools that allow designers to turn their wildest ideas into reality. XPress has long had several page-layout options that InDesign 2 doesn't offer, such as customizable dashes and stripes for lines and borders, and boxes that you can merge to create complex shapes.

Layers The more complex your layout, the more important a layers palette is. InDesign 1.X had a layers palette, but XPress has not had one until now. The two are similar in function and form, though only XPress can turn off text runaround for hidden layers. If you have two >>

<< pictures, each on a different layer, InDesign wraps around both of them—even if one layer is hidden, and that can drive you crazy.

Transparency The flashiest addition to InDesign 2 is the ability to make objects transparent and display transparency in native Photoshop and Illustrator files. InDesign also lets you apply drop shadows to any object, even when the drop shadows fall over other objects or images in the background.

InDesign's transparency tools offer designers an astonishing array of cool effects, but they have an important effect on productivity, too. You may not need to create clipping paths anymore; instead, you can erase an image's pixels in Photoshop—often much easier than making a clipping path. (I say *may* because some people like the effect of sharp-edged clipping paths.)

XPress has almost no transparency options other than importing images with clipping paths. This is particularly frustrating because several years ago Quark's ill-fated QuarkImmedia product was capable of both drop shadows and object transparency.

Long Documents InDesign 1.X had almost no long-document features, such as table-of-contents and index tools or a book palette, all of which are in both XPress 4.X and 5. Adobe has added those features to InDesign 2, but other than the nicely designed Book palette, these features have a surprisingly clunky interface. On the other hand, InDesign lets you print a whole book to disk as a PDF file (which you can't do in XPress).

XPress 5 has a few small but helpful new long-document abilities, such as automatically reversing names when they're added to an index (InDesign also does this) and allowing the addition of character styles to a table-of-contents definition (InDesign does not do this). On the whole, XPress still offers better long-document features.

Tables

Quark announced XPress 5's table-making tools with great fanfare, so

Who Wins the Features Race?

Features shouldn't be the only reason you choose one program over another, but feature comparisons are important decision-making tools. (This list doesn't include features that are very similar in both programs.)

	QUARKXPRESS 5	ADOBE INDESIGN 2
Text and Type		**The Winner**
Drag text from Finder	○	●
Multiline composing feature	○	●
Optical kerning	○	●
Customizable kerning and tracking tables	●	○
Hanging punctuation	○	●
OpenType features [1]	○	●
Import Excel files	○	●
Multilingual support	○	●
Compare styles	●	○
Base paragraph styles on character styles	●	○
Add pages upon text import	●	○
Character styles in table of contents	●	○
Link non-empty text boxes	○	●
Fixed column width in text box	○	●
Strip extra ASCII characters on import	○	●
Flag text problems [2]	●	●
Redefine styles based on changes on page	○	●
Retain bold and italic when applying styles	○	●
Insert characters from extended character set	○	●
Stroke and fill text	○	●
Links to text files	○	●
Rotate text within frame	●	○
Change case	○	●
Pictures		**The Winner**
Import Photoshop files	○	●
Read transparency in images	○	●
High-resolution preview	○	●
Drag in editable vector art	○	●
Contrast curve for TIFF and JPEG images	●	○
Object halftoning	●	○
Embed images in document	○	●
Embed fonts in EPS files	○	●
Drag pictures from Finder	○	●
Color	**The Winner**	
Ability to mix spot colors	●	○
Replace color on delete	●	○
Drag and drop on multiple objects	●	○
Gradient tool and swatches	○	●
Multistep blends [3]	○	●
Paper color	○	●
Tint swatches	○	●
Page Layout		**The Winner**
Drop shadows	○	●
Feather objects	○	●
Object transparency	○	●

●=yes; ○=no. [1]OpenType capabilities include automatic creation of fractions and swash characters, replacing old-style numerals, and extended character sets. [2]The programs find different things: InDesign can highlight missing fonts, H&J violations, and other type problems, while XPress's free TypeTricks XTension can find overset text boxes, widows, and orphans. [3]InDesign lets you set stop points and have more than two colors in a gradient. [4]Maximum magnification in XPress is 800 percent. [5]Guides are clunky in XPress. InDesign lets

	QUARKXPRESS 5	ADOBE INDESIGN 2
Master pages based on other master pages	○	●
Navigation palette	○	●
Multiple views of document	○	●
Convert document page to master page	○	●
Merge object shapes	●	○
Text wrap optional on hidden layers	●	○
Text wrap on anchored objects	●	○
Zoom to 4,000 percent magnification [4]	○	●
Eyedropper tool	○	●
Custom lines	●	○
Line arrowhead options	○	●
Proof view (including preview overprinting)	○	●
Tool preferences	●	○
Objects can extend past pasteboard	○	●
Guides are objects [5]	○	●
Tables		**The Winner**
Link tables across frames	○	●
Transparent table cells	○	●
Expanding cells	○	●
Export and Print		**The Winner**
Direct PDF export [6]	○	●
Export book as PDF or PostScript [7]	○	●
Device independent, DSC-compliant PostScript	○	●
Print guides	○	●
Simulate overprinting	○	●
PostScript error handling	●	○
Export SVG	○	●
Preflight documents	○	●
Web and XML	**The Winner**	
Export page as HTML [8]	●	●
HTML form objects (buttons, menus, and so forth)	●	○
Rollover images	●	○
Image maps	●	○
Convert formatted text to graphics	●	○
Export multiple pages in single HTML	○	●
Automatic navigation links	○	●
Create XML without DTD	○	●
Meta tags in HTML	●	○
General		**The Winner**
Run natively in Mac OS X	○	●
Crash protection [9]	●	●
Multiple undos	○	●
Run on 600-by-800 monitor	●	○
Run in Mac OS 8	●	○
WebDAV support	○	●
Editable keyboard shortcuts	○	●

you select guides for careful placement. [6]XPress has an Export PDF feature, but it requires Adobe Distiller. [7]XPress can export only one document at a time to PDF or PostScript, not an entire book palette. [8]InDesign lets you export the page geometry with CSS tags; QuarkXPress saves page geometry with either CSS or the more common HTML table structure. [9]InDesign can save almost all your work up to the moment you crashed, while XPress saves files only if you turn on Auto Save.

the fact that InDesign 2's table tools trounce XPress's is all the more noteworthy. InDesign 2 can import Microsoft Word and Excel tables, apply alternating tint stripes that update as a table changes, and flow tables across pages or columns. XPress can't do any of this. (The program ships with an AppleScript that creates alternating tint stripes, but you have to invoke the script manually after adding or deleting rows.) More glaringly, XPress can't make a table, or even a gridline in a table, transparent. On the other hand, XPress does let you draw a table with a Table tool, while InDesign forces you to draw a text frame first and then insert a table into it (see "Set the Table").

Compared with InDesign's elegant solution, the table features in XPress are merely functional. Unfortunately, neither program includes table styles, so you can't use a style to apply the same formatting to multiple tables.

Printing and PDF

Many service bureaus and printers avoided InDesign documents because version 1.X caused hassles for them: it required a particular printer driver, the Print dialog box was difficult to navigate, and InDesign documents often wouldn't print correctly (or at all) because of PostScript errors. Fortunately, Adobe reworked InDesign's Print dialog box, which now lets you choose any driver. And writing a PostScript file to disk in InDesign is significantly easier than it is in QuarkXPress. All of these changes mean that printing in InDesign 2 is much improved.

But correctly printing files with transparency is still a process of trial and error for imaging centers. Printing transparent type on the Scitex Brisque RIP also causes a significant problem: the type pixelates.

XPress has a few minor new print features, including an improved proxy preview (which, sadly, is still visible only when you select the Preview tab) and an option that scales documents when printing to non-PostScript printers. >>

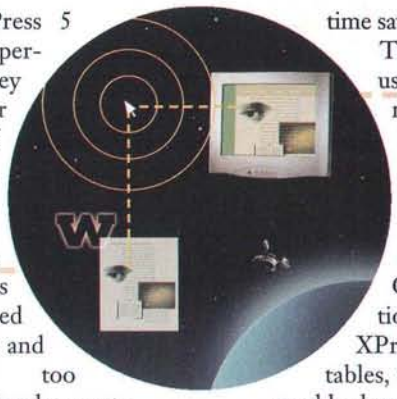
<< view tab) and an option that scales documents when printing to non-PostScript printers.

PDF Files PDF is quickly becoming the format of choice for sending files to printers and service bureaus. Some magazines even refuse to accept ads in any other format, so it's increasingly important that your page-layout program handle PDF files well. While XPress 5 requires that you own the $249 Adobe Acrobat package to build PDF files, InDesign can simply write them to disk. And in my testing, XPress took more than twice as long as InDesign did to make a PDF file.

The difference between the programs' handling of PDF files is even starker. In my tests, file sizes of XPress documents with imported PDF graphics were more than ten times the size of identical InDesign files, and printing the XPress files took significantly longer.

InDesign lets you include security options, such as password protection, in your PDF files; XPress doesn't. XPress's one advantage is that it lets you print color separations to disk as a PDF file—InDesign lets you save only composite CMYK or RGB PDF files, so you must separate the composites in Acrobat or another application.

Both programs can automatically create hyperlinks and bookmarks, though an XPress 5 bug breaks hyperlinks when they cross two or more lines of text.



The Web

Designers generate documents that are destined for both print and the Web, but too often they simply create XPress documents and then print them out and hand them off to an online department, where they are re-created in a Web-authoring program. Quark wants to simplify this process, so the majority of new features in XPress 5 are meant to help you make Web documents. For instance, you can build rollovers, image maps, and even form items (text-entry fields, pop-up menus, radio buttons, and so on).

However, to export an XPress page as HTML, you must first create a separate Web document and then drag and drop text and graphics from your print file to that document. While InDesign doesn't have interactive Web elements like XPress's, it does let you export basic HTML pages directly from any document, and that translates into time saved.

The two programs use different techniques to lay out Web pages, but both write relatively clean HTML code. InDesign relies on CSS absolute positioning, or layers; XPress uses invisible tables, which work better on older browsers. Both XPress and InDesign can also convert your TIFF images to GIF or JPEG files on-the-fly when you export them, but only XPress lets you specify export formats on an image-by-image basis.

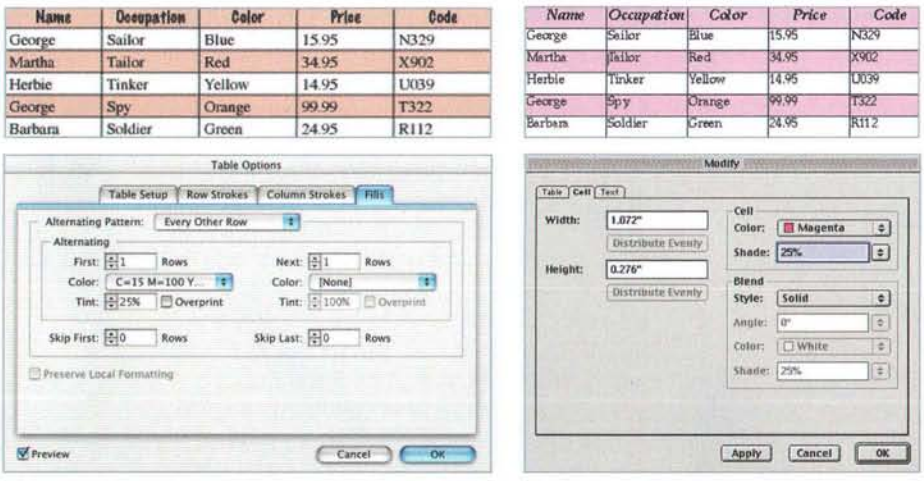
XPress has better tools for the export of HTML than InDesign, but they're far from perfect. For example, you can't export all your text and graphics to HTML without page geometry—something that InDesign does with no trouble.

Because InDesign's and XPress's Web-feature sets are still relatively limited, the HTML from either program is likely to be just a first step in building Web pages that will be finalized in a Web-publishing program such as Dreamweaver or GoLive. If you're simply trying to export your content, and you rely on Web-heads to format it into HTML, InDesign may be the better choice. I just hope that future versions are more closely integrated with Adobe GoLive and LiveMotion.

XML Because XML separates your document's content from the form it takes, it's the key to publishing across multiple media. Both XPress 5 and InDesign 2 offer new tools for importing and exporting XML documents, though Adobe shipped InDesign's cross-media tools in beta form. For a more in-depth look at XML in each application, see "Recycle with XML."

Missing in Action

Programs can always be improved, and this is particularly true for these two programs. Neither offers a built-in text editor, such as Adobe PageMaker's venerable Story Edi- >>



Set the Table While XPress lets you draw tables anywhere on your page with the Table tool, InDesign allows tables (Table: Insert Table) only within a text frame. Nevertheless, you can do a lot more with InDesign's tables (left), such as creating transparent cells, blends across multiple cells, and diagonal lines in cells. If I hadn't seen InDesign 2, I'd be pleased with the table features in XPress 5 (right); however, they pale in comparison.

RECYCLE WITH XML

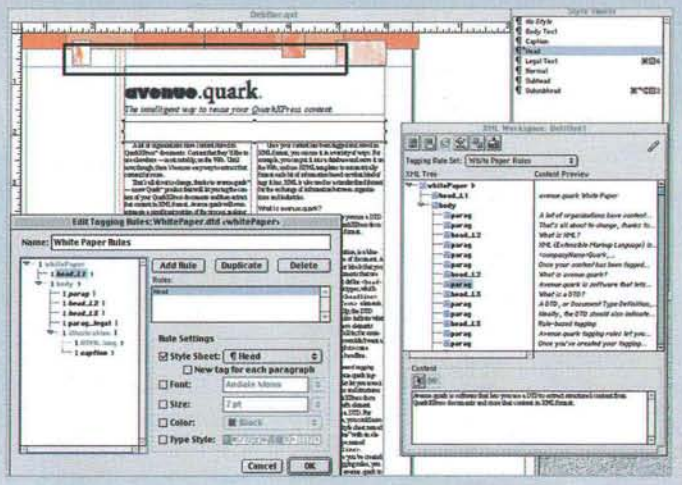
Designers often reuse information: a mission statement may appear in a brochure and an annual report, for example, and product descriptions can be used in paper catalogs and on company Web sites. If you could extract these elements as XML, which separates the information's content from its structure, repurposing would be a lot easier. Both InDesign 2 and QuarkXPress 5 have XML capabilities, although Adobe says that InDesign's XML features are still in beta form.

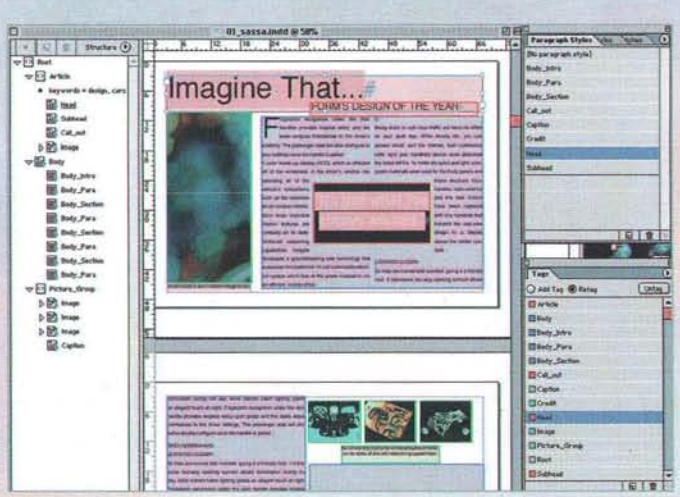
Neither product is for the complete XML novice; both require that you know at least the concepts and vocabulary of XML—tags, elements, and attributes—and XPress requires that you know more. (For an introduction to XML, see "Inside XML," October 2000.)

Both XPress and InDesign rely on plug-ins (avenue.quark and XMedia UI, respectively) to export XML files from native XPress and InDesign documents and to import XML files into the applications.

Both plug-ins let you extract formatted text from an XPress or InDesign document and wrap XML tags around that content to make an XML file. Essentially, you open a formatted layout that contains text and graphics, drag and drop to associate XML tags with named styled components (paragraph and character styles), and then tell the software to create an XML file.

In XPress, you drop the text components onto a tree diagram of your XML file, according to tagging rules you have previously set (see the top screenshot). In InDesign, you drop tag names onto styled areas (text or graphics frames) or select a frame and click on a tag name (see the bottom screenshot).





Both products can tag text boxes one at a time or associate named styles with tag names to tag an entire document at once. XPress does not export pointers to graphics files; InDesign does.

Tag, You're It In InDesign, you can create tag names on-the-fly, typing them into a form or importing a set of tags from an existing XML file or InDesign document. The tag names are displayed in alphabetical order. In contrast, avenue.quark requires predefined XML models—called Document Type Definitions (DTDs). Each model contains a set of tags and tagging rules.

InDesign's ad-hoc tags could be an advantage when you're taking care of those annoying late-night production crises, but there is potential for downstream process problems, since XML documents usually have rules that are meant to be followed. InDesign's approach falls short in other areas, too. Alphabetical lists are fine for 20 tags, but many real tag sets run into the hundreds. And this tag list doesn't help you figure out which tags to apply where. Furthermore, InDesign outputs only those tags you have explicitly mapped to styles. That's a drawback because the program won't import "wrapper" tags, such as a list element that surrounds several list items.

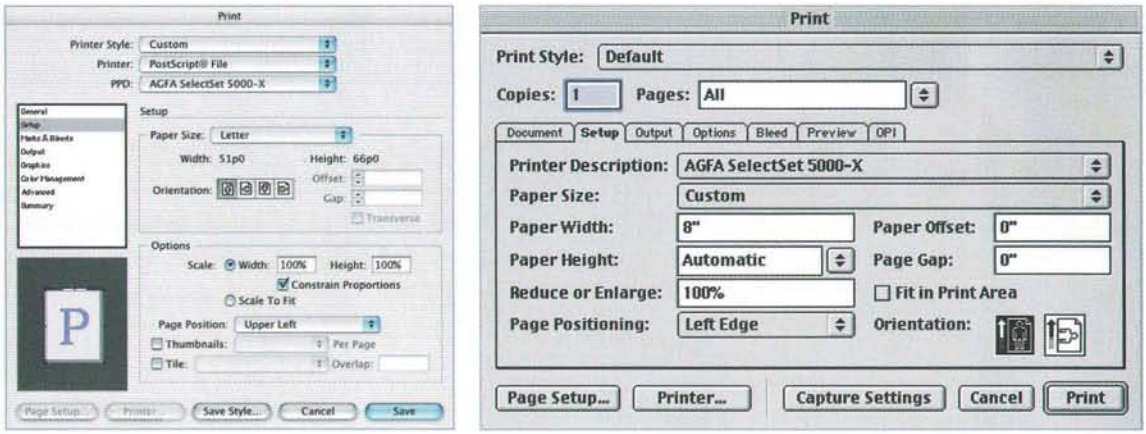
XPress's reliance on a DTD is logical because customers who need you to create XML output can likely provide you with a DTD or an XML schema, which can become a DTD. This means that tags come in complete sets and display in a structured tree view that shows the tagging rules. The tree view shows all the tags there can be and where they are used—for example that a **<figure>** contains a **<title>**, a **<graphic>**, and a **<caption>**. XPress can output wrapper tags (such as **<body>**) that you do not have to choose or key in. Containment and wrappers are one of the key differences between XML and flat page-layout structures.

Table Setting In both applications, XML tables are more trouble and more work than text and headings. InDesign lets you import a simple table (no vertical or horizontal spans), but before import, you must set up a table layout of exactly the right size and shape, which is hardly convenient. You can also export simple XML tables. XPress doesn't recognize tabs or separate styles to identify headings or rows of a table, so you have to deal with a table one cell at a time. In both programs, you're better off treating complex tables as a graphic or manually cutting and pasting in each cell.

The Bottom Line InDesign's XML features are not as complicated as XPress's, and they have simpler and better documentation. Because you can perform many tasks in more than one way, you can choose the way that you find to be most intuitive. The ability to export a document as XML by mapping its named styles directly to tags of the same name, thereby producing some XML, is valuable.

XPress's avenue.quark XML plug-in is more powerful, at least potentially. But it's also more complex. The plug-in not only allows for more control but also demands it. You should not approach avenue.quark without both XML and avenue-specific training.

Both products can be frustrating. Unexpected key strokes in InDesign can crash the program. Although avenue.quark is much better than it was a year ago, its user interface is sometimes awkward—for example, when you're manipulating within placeholders. And when things go wrong in avenue.quark, it's often impossible to recover gracefully—because the Undo command frequently doesn't work as it should. If you're serious about extracting XML from XPress, you'd be better off with conversion-mapping software, available from many sources including Apropos, Easy Press, Noonetime, North Atlantic Publishing Systems, and PCI.—DEBORAH LAPEYRE



Better Print Boxes Adobe has reworked InDesign's Print dialog box (left). Quark has enhanced the preview graphic in XPress's Print dialog box (right), but it's available only under the Preview tab.

<< tor, or running page headers that change depending on page content, such as those offered by Ventura Publisher more than a decade ago.

And both programs should be able to handle different page sizes in a document, create printer spreads (for saddle-stitched booklets), make noncontinuous text selections, run text around a drop cap (for example, flowing diagonally down the side of a *V*), set text indents in em units, specify page footnotes, and automatically identify orphans (single or partial words on the last line of a paragraph).

Infrastructure

One of the greatest challenges now facing Adobe is how to build an infrastructure to support InDesign. Today, just about every publishing consultant, trainer, and temporary worker is well-versed in XPress, and hardly any of them know their way around InDesign.

InDesign has powerful scripting tools for both Mac OS and Windows, but if you depend on AppleScripts that control XPress, be warned: they don't work in InDesign. Similarly, many users rely on XTensions; unfortunately, many (perhaps most) XTensions that worked with XPress 4.X don't work in version 5. While some of these tools are also available as InDesign plug-ins, many developers are taking a wait-and-see approach until enough users demand software that works with InDesign.

Processing Power Many companies are also concerned about InDesign's hefty requirements: you can use this program on a G3 computer, but you probably won't be happy unless you have a G4 stocked with at least 128MB of RAM (256MB if you're running OS X). XPress 5 requires a faster machine and more RAM than version 4.X did, but a G3 processor is plenty, and XPress itself takes up only about 30MB or 40MB of RAM.

The Price Is Right On the other hand, InDesign has an attractive price: in the United States, you can expect to pay about $699 for InDesign; XPress costs about $200 more. An upgrade from XPress 3.X to version 5 costs $399; from 4.X to 5, $299. Upgrading from InDesign 1.X to 2 costs $99 before April 10 and $149 thereafter. Adobe is also offering a $300 rebate to registered XPress owners. Outside the United States, the price difference is even more significant. For the cost of XPress, Europeans and Australians can buy InDesign, Photoshop, Illustrator, Acrobat, and a new 17-inch monitor. Quark's customer base is largely international; it will be interesting to see whether the company adjusts prices.

The Last Word

Both QuarkXPress 5.0 and Adobe InDesign 2.0 offer major improvements on previous versions—particularly impressive are XPress 5's Web tools and InDesign 2's better performance and transparency features. Overall, InDesign poses fewer limitations and offers more control than XPress, and many people will be tempted to make the switch, especially those upgrading to OS X.

However, any move—whether to InDesign or to a new version of XPress—may be slow in coming, given the many companies that still make do with XPress 3.3. Nevertheless, if Quark is going to keep

QUARKXPRESS 5.0

RATING: ♦♦♦½

PROS: Familiar interface; easy-to-build, simple Web and print pages; widely used.

CONS: Expensive; not OS X native; requires Adobe Distiller to create PDF files; Undo doesn't apply to multiple actions.

PRICE: $899; upgrade from version 3.X, $399; upgrade from version 4.X, $299.

OS COMPATIBILITY: Mac OS 9

COMPANY: Quark, 800/676-4575, www.quark.com

INDESIGN 2.0

RATING: ♦♦♦♦

PROS: Object transparency; OS X native; excellent typography and PDF support.

CONS: Requires a fast computer; no multi-ink colors; limited HTML export.

PRICE: $699; upgrade, $149.

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Adobe Systems, 800/833-6687, www.adobe.com

Contributing Editor DAVID BLATNER is the author of *Real World QuarkXPress 5* (formerly *The QuarkXPress 4 Book*; Peachpit Press, 2002) and a coauthor of the upcoming *Real World InDesign 2* (Peachpit Press, 2002). You can find him at www.moo.com.

Macs without Limits

Perhaps Mac users with disabilities are more devoted to their chosen computer than others are. If you define *loyalty* as a willingness to put up with glitchy software and inadequate tools, then folks with vision, mobility, and other disabilities who haven't jumped to another platform deserve a special shout-out from Apple. But disabled computer users no longer have to survive by sheer tenacity—they're getting help from the U.S. government.

New federal statutes, such as Section 508, are taking on the obstacles that stand between disabled people and computers. (For an explanation of Section 508 and its impact, see "Behind Section 508.") And although Apple provides only a few tools for disabled users now, there's little doubt that this will have to change. In the meantime, smaller companies and shareware authors have stepped in to try and fill the breach. Here's how you can put together an accessibility toolbox of utilities, hardware, and workarounds. (See "Mac Accessibility Tool Kit" for more information.)

Mac Mobility

Manipulating a mouse and keyboard are the greatest challenges for users with motor-skill disabilities and those who don't have full use of their hands or fingers. Some users can effectively press keys with fingers or pointing sticks but can't maintain the steady control required to navigate with a mouse. Others can use a mouse well enough to activate menus and buttons but can't work intensely with a standard keyboard.

Voice Power With its *Star Trek* potential to let us talk to our computers as if they were old friends, speech-recognition software offers great hope to people with upper-body disabilities or injuries. Unfortunately, the Mac has lagged behind Windows for years in this area, and it's only now catching up. Recently, IBM released the $180 ViaVoice for Mac OS X (⇕; *Reviews*, April 2002), a flawed but powerful tool for those who want to dictate text and control a Mac by voice. You can make this software usable for people with disabilities, but since few of the commands necessary for controlling a Mac are built in, it takes some work. (See "Control ViaVoice," *Secrets*, elsewhere in this issue, for tips.) For Mac OS 9, the only full-fledged option is MacSpeech's $99 iListen.

Keyboard Control Easy Access, a control panel included with the classic Mac OS installation CD, was left out of early versions of the new operating system; it returns (with a new name) in version 10.1, as a pane in the System Preferences application. Now known as Universal Access, it includes two tools. With Sticky Keys, you can press a grouped key combination (such as shift-⌘-N, to create a new folder) as a sequence (see "Built-in Access"). With Mouse Keys, you can use the Mac keyboard's arrow keys as a substitute for mouse movement.

And you'll find another tool in the Keyboard system-preference pane: Full Keyboard Access allows you to use your keyboard to select icons in the Dock and buttons in the Finder window toolbar. In some applications, you can also use Full Keyboard Access to activate and navigate windows, dialog boxes, and palettes.

ILLUSTRATION BY BRIAN CAIRNS

Sticky Keys is useful for people who have trouble pressing many keys at once. Mouse Keys and Full Keyboard Access can help people who need to minimize the use of pointing devices. They're welcome basic tools, but they don't fully address most mobility-impaired users' needs.

Ricardo Ettore's $27 TypeIt4Me X and Script Software's $20 CopyPaste X aren't expressly designed for disabled users, but these nifty text-manipulation tools offer special benefits for anyone who can use a keyboard for some tasks but finds typing difficult or tiring.

With TypeIt4Me, you create abbreviations for text you type frequently. The abbreviations can represent words, phrases, or entire paragraphs. For example, you can set up the program so that when you type **myad**, it pastes your full address into the open appli- >>

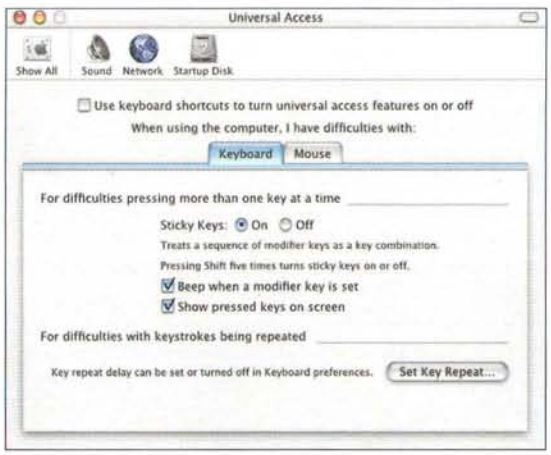
COURTESY OF NATURALPOINT

Steer with a Stare With the TrackIR mounted on top of your monitor, and a dot that sends infrared signals mounted on your forehead, you can control a Mac just by looking at it.

>> cation. This works a lot like Microsoft Word's AutoText tool, but TypeIt4Me works in any application. You can even export your TypeIt4Me abbreviations file for use on another Mac.

CopyPaste cuts down on typing by letting you save as many as 100 items on its expanded Clipboards. Just cut and paste text or objects as usual, and CopyPaste saves these selections, even when the Mac is restarted. Neither CopyPaste nor TypeIt4Me eliminates the need to type, but both can greatly simplify repetitive typing tasks. TypeIt4Me in particular offers flexibility and the advantage of complete customization.

Mac OS 9 Options Versions of TypeIt4Me, CopyPaste, and Sticky Keys (in the form of the Easy Access control panel) are available for OS 9. If you use a pre–OS X Mac OS, you can also download RJ Cooper & Associates' Slo-Mo, a free utility that slows down your Mac's operations, thus making it easy to choose from menus and draw with the mouse, for example. You control the speed via a control panel or keyboard shortcuts. Slo-Mo, like many accessibility utilities, is extremely good at one task. You can even customize Slo-Mo settings for applications that require a lot of mouse interaction, such as page-layout or drawing programs.



Built-in Access You'll find most of OS X's accessibility tools in the Universal Access system-preference pane. For example, if you have trouble holding down more than one key at a time (to use a shortcut such as ⌘-Q), you can use Sticky Keys to press a key combination as a sequence.

For those who can't type at all, Niemeijer Consult's $45 KeyStrokes 2.2 offers on-screen keyboard software. Using this program, you can type with the mouse (or other input device) in any application. KeyStrokes uses word prediction to help speed things up. For example, if you type **t**, you can quickly select the word *the* from a list of possibilities next to the keyboard. This software is compatible with TypeIt4Me. An OS X version should be available by the time you read this.

Hardware Options What software doesn't (or can't) do to aid users with mobility impairments is often accomplished by hardware. Since all modern Macs and PCs have USB ports, access to adaptive hardware may actually be greater for today's Mac users than it was in the past, when Mac compatibility meant that hardware makers had to offer separate devices with ADB and PS/2 ports. Now, a company that has a mouse- or keyboard-replacement device for Windows PCs need only add Mac driver software.

There are several hardware options for those who need hands-free access to a Mac. The TrackIR ($129 to $299, depending on the version), from NaturalPoint, consists of a USB monitor-mounted device and a small dot worn on the forehead (see "Steer with a Stare"). The hardware and dot communicate via infrared, enabling you to move the cursor and activate the keyboard with a light beam. (It should be available for the Mac by the time you read this.) Another infrared mouse replacement is the $1,900 HeadMouse, from Origin Instruments.

If you have the use of your hands but find it difficult to steer a mouse or hold down the mouse button as you drag, try the $275 Mouse Mover, from Tash (see "Serious Switches"). This pointing device can accommodate five single-function switches or one multifunction switch, which you use to perform mouse functions such as clicking, double-clicking, and click-dragging. The Mouse Mover lets you position the switches in any way that's easily accessible, and you can control the speed of both initial and continuing mouse movement on screen. The Mouse Mover is available in both ADB and USB versions; according to Tash, it is compatible with all recent versions of Mac OS.

RJ Cooper's BigKeys keyboards are so named for their 1-inch-square keys. The USB-compatible devices (they require a $19 USB adapter), with software that turns the alt key into a ⌘ key, are easier for some motor-impaired users to manipulate than standard keyboards. They can also aid some visually impaired people who are not touch typists. The $149 BigKeys Plus comes in either a standard QWERTY version or what the RJ Cooper Web site calls an "ABC" (or Dvorak) version. The $165 BigKeys LX is a larger, 97-character keyboard. Both are available >>

BEHIND SECTION 508

The goal of the U.S. government's Section 508 standards is to ensure that hardware and software makers develop products that accommodate people with disabilities and provide support for additional assistive technologies when necessary. (As an analogy, not every restroom stall has to permit access by disabled people, but a certain number do.)

The History In 1998, the U.S. Congress passed a law requiring that new computer equipment bought by federal agencies accommodate disabled users. Two years later, the government published the final standards, which came to be called Section 508. Since last June, federal agencies have been legally required to buy only computers that meet the Section 508 standards, with rare exceptions (for example, information systems used for national security or military command).

The Stakes These standards apply even if agencies don't employ any disabled workers. An agency that buys a noncompliant computer risks costly lawsuits, so computer companies that don't provide consumers with Section 508–compliant products could lose sales.

The potential effect on Apple is significant. The U.S. government is the largest information-technology consumer in the world. And while the Section 508 standards apply only to federal agencies, state and local governments often take their cues from federal regulators when they adopt rules, further raising the stakes.

Sales to schools, a traditional Apple stronghold, could also be in jeopardy. According to the U.S. Department of Education, school districts that receive certain government grants will be expected to follow Section 508 guidelines. Eventually, many public schools may adopt similar regulations, if only to accommodate disabled students and teachers.

Inside the Standards

What makes compliance hard for both federal agencies and computer manufacturers is that, as with many government regulations, Section 508's rules aren't always clear.

The regulations cover both software and hardware. OS 9—aided by the Easy Access and CloseView control panels—probably meets the basic software standards. However, OS X doesn't yet offer a full suite of basic tools. Here are some basic requirements:

- If a function can be easily described in a few words, it must have a keyboard equivalent. Saving a file fits into this category; complex operations, such as drawing, do not.
- It should be obvious what is active on screen (where you must click with the mouse or enter a keystroke).
- Users must be able to choose from a range of contrast and color settings.
- Controls can't be distinguished by color alone.

Luckily, 508's hardware regulations are easier to satisfy, because they involve basic physical and functional requirements for keyboards and other input devices. For example, users must be able to discern controls and keys by touch, a rule that's met by the raised markers on selected keys. The standards also specify that it can't take more than five pounds of force to activate controls and keys.

Section 508 also requires that expansion slots, ports, and connectors comply with "publicly available industry standards"—no problem for the Mac, since it now uses USB and FireWire.

Partners Needed

Section 508's basic requirements aren't very complicated, but the rules get tougher when it comes to accommodating *specific* disabilities. These standards are even more critical for Apple, because they're difficult to meet without outside help. For example, if a computer can't accommodate blind users, it has to support third-party assistive-technology devices that can.

Apple's first challenge is to convince the makers of these products that investing in the Mac is worthwhile. The platform's small market share could appear particularly daunting to companies that are already niche players.

The company's second challenge is to provide those smaller companies with support. Some technology isn't tricky to implement, because it simply replaces an existing device, such as a mouse or keyboard. But other devices can't function unless the operating system is designed to work with them. For example, a screen reader has to know about every bit of displayed text, whether it's in a menu, a dialog box, or a file name.

Enterprising programmers can sometimes reverse-engineer an operating system to make it do their bidding. However, that's a risky approach, because changes to system software can have disastrous effects. Assistive-technology developers need documented OS-level support and programming tools.

The Challenges Ahead

When it comes to accessibility, Mac OS X is still very much a work in progress. How it will grow into a fully accessible operating system that meets the needs of disabled users and Section 508–minded organizations remains to be seen. Now it's up to Apple.—*MACWORLD* STAFF

THE ACCESSIBLE WEB

For many people, the Web is an essential part of the computer. It's a dictionary, a phone book, a newspaper, and a shopping mall. For this reason, Section 508 doesn't stop at operating systems and hardware. It also offers guidelines for Web-site accessibility.

To comply with Section 508, a Web site must provide text alternatives to images and multimedia, as well as offer navigation cues other than color. The guidelines specify that images must have useful alternative (**alt**) text, for example, and that multimedia presentations must have synchronized "equivalent alternatives" (captions or audio). There are also rules for using tables and image maps.

If you're a Web-site designer, you can use the WebAble accessibility monitor (www.accessibilitymonitor.com/) to determine whether your site is compliant. For some design tips, see "Create a Barrier-Free Web Site," *Create,* August 2000.

Serious Switches The Mouse Mover lets you arrange corded buttons (which are purchased separately) in any way that's convenient for you. Program each to perform tasks such as clicking, dragging, and navigating.

with high-contrast colored keys (see "Easy Typing").

If none of these devices fit your needs, check out a company that specializes in hard-to-find accessibility products—for example, Keyboard Alternatives & Vision Solutions (800/953-9262, www.keyalt.com).

Visualize Accessibility

Blind users typically interact with computers via software that reads a screen's contents—both in documents and on the desktop. For visually impaired users, screen magnification and high-contrast reverse video are alternatives to screen reading.

OS X includes no built-in tools for blind or visually impaired users. This is a step back from previous versions of the OS, which include the minimalist CloseView control panel (available on the OS installation disc or from www.apple.com/disability), which can magnify the screen and invert its colors.

OS X does retain the Speech Manager software that speech-aware applications can use to read controls and documents aloud. However, TextEdit (like SimpleText before it) is the only application included with OS X that can be read by such programs. With a simple command, you can tell TextEdit to read documents, using a Speech Manager voice.

No other companies have stepped in to fill the gap; we couldn't locate any screen-reading or magnification software for OS X. Alva Access Group's $295 InLarge and $695 OutSpoken, the category's leaders for earlier versions of Mac OS, had not been updated at press time. Even for OS 9 users, these programs are a bit long in the tooth. InLarge, for example, supports only 256 colors or grays, making the software difficult to use with many color applications.

Contrast Choices Some visually impaired users interact best with their Macs when the screen's colors are inverted, showing light text on a dark background. Both CloseView and InLarge provide this capability for users of the classic Mac OS. And applications such as Word and Eudora have preferences that allow you to use high-contrast windows.

For OS X users who need a lot of visual contrast, Michel Fortin's free Black Light does its job well. The simple tool inverts the screen, preserving more of the OS's natural shading artifacts than CloseView ever did, without sacrificing resolution. Version 1.5 has a screen-dimming preference and lets you hide or show the stripes that appear in some OS X dialog boxes. It works with all OS X applications and inverts the Classic environment, too. To turn it on and off, just click on its icon in the Dock.

Easy Typing RJ Cooper & Associates' BigKeys has 1-inch keys that can aid visually impaired and motor-impaired users.

Mac OS 9 Options If you need more customization in your visual environment than a high-contrast screen can provide, it's best to stick with OS 9. You'll find more helpful tools, particularly if you have some vision.

RJ Cooper's $99 KeyRead is what the company calls a "junior" screen reader. It can read dialog boxes and windows, and it allows you to navigate with the keyboard while you use it. You can tell KeyRead to read letters, words, and sentences, and to move the cursor to dialog-box buttons. But KeyRead can't be set up to read entire documents, and its navigation controls are incomplete.

Another RJ Cooper tool, the $99 Biggy, provides a greatly enlarged cursor. This is helpful to those who often "lose" the standard cursor on screen because they have difficulty seeing it. You can use your own cursor object, or you can choose from a large selection of included pointers. Biggy is not compatible with CloseView, unfortunately.

Tiger Technologies' $20 Window Monkey changes the background of windows and can be used to contrast text with background. This is helpful if you don't use InLarge or CloseView to invert the screen but would like increased contrast on screen. Its effects are limited to Finder windows.

The Last Word

The current dearth of accessibility products for Mac OS X makes an upgrade to Apple's highly visual operating system a bad bet for most blind or visually impaired users. For mobility-impaired users whose needs are best served by input devices, rather than

+ WEB-BASED RESOURCES

- **The Access Board** (www.access-board.gov) is the federal agency responsible for accessible design.
- **Alliance for Technology Access** (www.ataccess.org) is a national assistive-technology network.
- **The Center for Applied Special Technology** (www.cast.org) is an organization that uses technology to expand educational opportunities for disabled people.
- **DisabilityDirect.gov** (www.disability.gov) is the federal government's portal to disability-related Web sites.
- **Section 508** (www.section508.gov) explains everything you need to know about the federal regulation.
- **WebAIM** (www.webaim.org/standards/508/checklist) will help you check your Web sites for Section 508 compliance.

Mac Accessibility Tool Kit

COMPANY	PRODUCT	PRICE	CONTACT	OS COMPATIBILITY	COMMENTS
Mobility Aids					
IBM	ViaVoice for Mac OS X	$180 [A]	800/825-5263, www.ibm.com/software/speech/mac/osx/	Mac OS X	Speech-recognition program lets you dictate text and control a Mac.
MacSpeech	iListen 1.2	$99 [B]	www.macspeech.com	Mac OS 9	Speech-recognition program lets you dictate text and control a Mac.
NaturalPoint	TrackIR	$129–$299 [C]	541/753-6645, www.naturalpoint.com	Mac OS 9 [D]	Hands-free, infrared mouse replacement allows you to control the computer with a look.
Niemeijer Consult	KeyStrokes 2.2	$45	www.niemconsult.com/KSdownload.html	Mac OS 9 [D]	On-screen keyboard lets you type with a mouse (or other device) in any application; uses word prediction to speed input.
Origin Instruments	HeadMouse	$1,900	972/606-8740, www.orin.com/access/	Mac OS 9	Hands-free, infrared mouse replacement allows you to control the computer with a look.
Ricardo Ettore	TypeIt4Me X	$27 (Mac OS X), $9 (Mac OS 9)	www.users.dircon.co.uk/~r-ettore/	Mac OS 9, Mac OS X	Text macro tool lets you automate repetitive typing tasks.
RJ Cooper & Associates	BigKeys	$149 (Plus), $165 (LX)	800/752-6673, www.rjcooper.com/site-map/index.html	Mac OS 9	Motor-impaired users can use tools other than their hands to manipulate the large keys on this keyboard.
	CrossScanner	$99	800/752-6673, www.rjcooper.com/site-map/index.html	Mac OS 9	Software works with switches or other mouse and keyboard emulators to enable on-screen mouse manipulation.
	SAM Trackball	$164 (ADB), $174 (USB)	800/752-6673, www.rjcooper.com/site-map/index.html	Mac OS 9	Switch Assisted Mouse (SAM) Trackball replaces a conventional mouse and includes ports for switches that replace mouse functions.
	Slo-Mo	free	800/752-6673, www.rjcooper.com/site-map/index.html	Mac OS 9	Program can slow down all, or selected, applications.
	SmartClick	$99	800/752-6673, www.rjcooper.com/site-map/index.html	Mac OS 9	Software clicks for you when you linger over a particular spot with the cursor.
	SwitchHopper	$99 (ADB), $79 (USB)	800/752-6673, www.rjcooper.com/site-map/index.html	Mac OS 9, Mac OS X	Hub for input switches has three ports.
Script Software	CopyPaste X	$20 [E]	www.scriptsoftware.com	Mac OS 9, Mac OS X	Tool can reduce the need for typing and mouse manipulation by storing text (or anything else) on as many as 100 Clipboards.
Tash	Mouse Mover	$275	800/463-5685, www.tashinc.com	Mac OS 9, Mac OS X	Available for ADB or USB ports, this device allows you to use as many as five single-function switches, or one multifunction switch, to control mouse movements and clicks (switches not included).
	Switch Click	$120	800/463-5685, www.tashinc.com	Mac OS 9	Device (ADB or USB) replaces a mouse-click with a switch.
Vision Aids					
Alva Access Group	InLarge	$295	888/318-2582, www.aagi.com	Mac OS 9	Program can magnify and invert screen colors, making it easier to navigate and read text.
	OutSpoken	$695	888/318-2582, www.aagi.com	Mac OS 9	Screen reader can read the Finder, applications, and documents out loud.
Michel Fortin	Black Light	free	http://homepage.mac.com/michelf/english/software/black-light.html	Mac OS X	Program inverts video and controls screen contrast.
RJ Cooper & Associates	Biggy	$99	800/752-6673, www.rjcooper.com/site-map/index.html	Mac OS 9	Biggy includes a set of large, easy-to-see cursors and allows you to create your own.
	KeyRead	$99	800/752-6673, www.rjcooper.com/site-map/index.html	Mac OS 9	Screen-reading program reads dialog boxes and small amounts of document text.
Tiger Technologies	Window Monkey	$20 [E]	510/527-3131, www.tigertech.com	Mac OS 9	Program allows you to replace the default background in Finder windows with an image or a high-contrast pattern or color.

[A] Upgrade from previous versions, $20. [B] No headphone included. [C] Available in three packages that include progressively more software, options, and technical support. [D] Mac OS X version should be available by the time you read this. [E] Shareware.

software, the upgrade makes more sense, and OS X should present no more difficulties than older versions of Mac OS did.

Government regulations have a way of forcing society to change in fundamental ways. If you want a practical example, just look outside. Sidewalk cutouts for wheelchairs—once rare—are now commonplace. In much the same way, Section 508 will compel computer companies to better accommodate disabled users. As they start to do so, developers who have already created hardware and software for disabled users may get the support they need to update and improve their products. And that can only be good news—for all Mac users. □

SHELLY BRISBIN is a visually impaired Mac user and freelance writer in Austin, Texas.

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Open Excel to the Web

There are many ways to manipulate and interpret data in Microsoft Excel, but you still have to get the data into the program somehow. Fortunately, Excel can automatically grab data—including financial data, sports scores, and price quotes—from anywhere on the Web. What's more, Excel can update that data every time you open a properly formatted file.

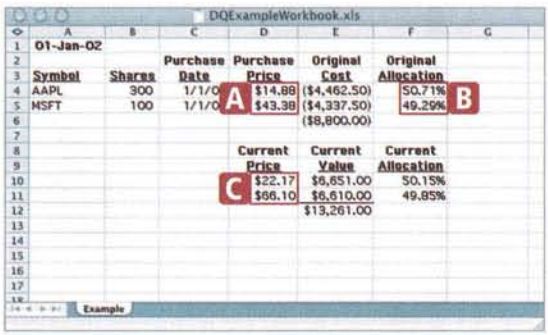
If you track your investments in Excel, this technique (called a Web query) means that you'll never have to import quotes again. Although you can keep track of your stock portfolio online or with a personal-finance application such as Quicken, using Excel lets you bypass the templates on Web sites and in Quicken. You'll have complete control over how you organize your data, as well as a link to real-world dynamic data.

We'll show you how to set up, run, and make practical use of an existing Excel Web query that delivers stock quotes to a simple portfolio worksheet. You'll also learn how to build your own Web query from scratch. The basic steps work in both Excel 2001 and Excel X, but we'll use Excel X for our example. □

JAMES BRADBURY is a former editor of *MacUser* and former online editor of *Macworld*.

1 Create a Portfolio Worksheet

Before you can call on the power of the Web query, you need a workbook with stock quotes.



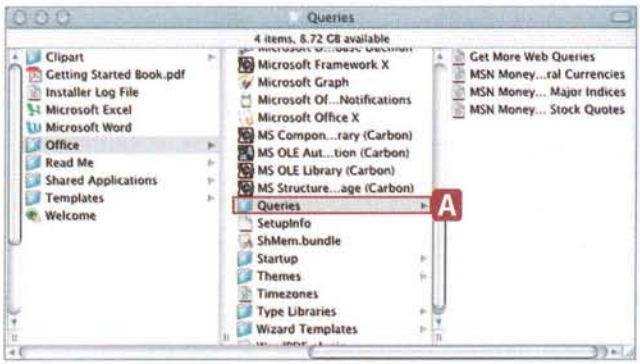
Our sample Excel workbook (which you can download from www.macworld.com/2002/05/howto/excel.html) has a worksheet with a simple portfolio for someone who invested nearly equal amounts in Apple and Microsoft on January 1, 2001.

The example uses basic formulas to calculate the original cost of the investments A and the initial percentage allocation of each of the two stocks in the portfolio B. The worksheet also shows how, one year later, the relative value of each stock in the portfolio has changed C.

This example shows how things looked on January 1, 2002, but what if you want to come back to this worksheet later in the year and calculate changes? You could, of course, look up the current stock-price quotes for Apple and Microsoft, and then update cells D10 and D11, but thanks to the power of Web queries, Excel can take over that drudgery.

2 Choose a Web Query File

Excel for the Mac can run only *presaved* Web queries, meaning that the query must be saved in a plain-text file. It's not exactly an elegant method, but it works. Although you can use a Web query to download information from almost any Web page, in our example we use one of the presaved queries that Microsoft supplies with Excel.



To find the Microsoft-supplied queries, go to Microsoft Office: Office: Queries A. Then choose the MSN MoneyCentral Stock Quotes query. (Of the other three Microsoft-supplied queries, one returns currency values, one returns various market-index quotes, and one—Get More Web Queries—points to an inactive page on Microsoft's Web site.)

Use Microsoft Word or a text editor to open the MSN MoneyCentral Stock Quotes file, and you'll see code that begins

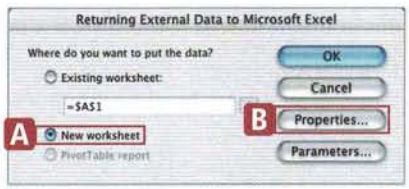
WEB
1
http://moneycentral.msn.com/investor/external/excel/quotes.asp?SYMBOL=["QUOTE","Enter stock, fund or other MSN MoneyCentral Investor symbols separated by commas."]

This code points to an Active Server Page at Microsoft's MoneyCentral site that returns whatever stock quotes you request. Microsoft doesn't have a MoneyCentral site any more (it's now called MSN Money), but this page still exists.

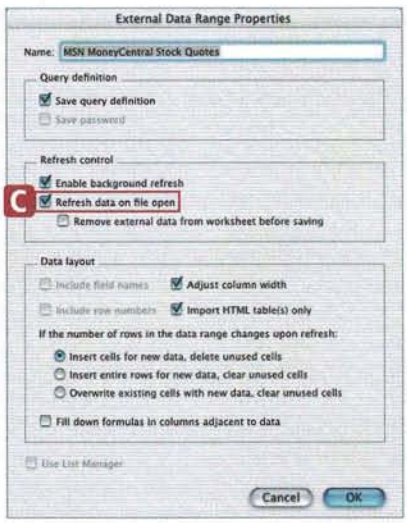
3 Run the Saved Query

Now that you've found the query you want to run, it's time to tell Excel to execute it.

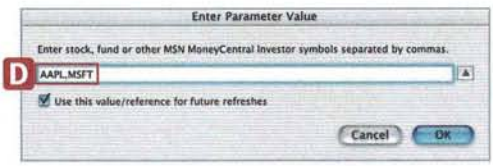
With your portfolio file open, select Get External Data: Run Saved Query from Excel's Data menu. You should get a dialog box requesting that you choose a query. Go to the Queries folder and choose the MSN MoneyCentral Stock Quotes file.



You'll get a dialog box asking where you want to put the data. Select the New Worksheet option A. Click on the Properties button B.



Select the Refresh Data On File Open option C so the stock quotes will refresh automatically each time you open the portfolio file. Click on the OK button. Click on the Parameters button.



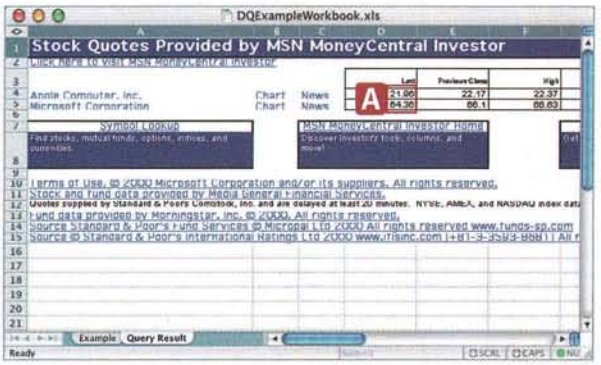
Enter the stock symbols for Apple and Microsoft, separated by a comma (**AAPL,MSFT**) D, in the blank field.

Click on OK, and Excel places the contents from the MoneyCentral Stock Quotes page on a new Excel worksheet within your example workbook.

4 Organize Your Worksheets

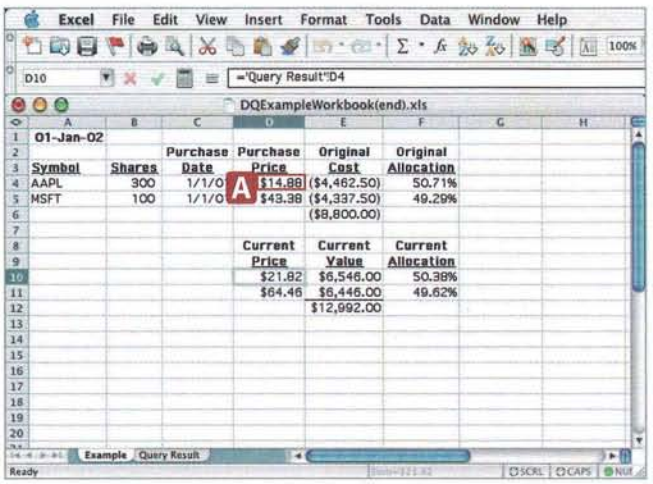
To make the stock information easier to work with, you can rename and reorder the worksheets.

If everything happened the way it was supposed to, you now have a worksheet containing lots of text from the Microsoft MoneyCentral site, as well as stock quotes for Apple and Microsoft A. You can rename this worksheet "Query Result" by double-clicking on its tab, as we did. You can also drag the tab to the left so it's normally positioned behind the portfolio worksheet. This Queries worksheet may not be pretty, but since it's behind the portfolio worksheet, you'll never have to see it unless you want to. The important thing is that somewhere on this worksheet you now have current stock prices for Apple and Microsoft.



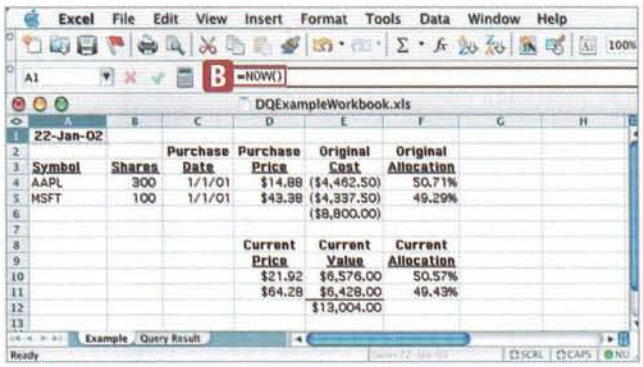
5 Link Data to Your Portfolio

Although you can now check the stock prices by looking at the new worksheet with the Web data on it, what you really want to do is seamlessly integrate that data into the example portfolio worksheet. If you've never linked cells on two different worksheets in the same workbook, now's your chance.



In the example worksheet, select cell D4, where Apple's stock purchase price resides A. Then click on the equal-sign button (=) in the Formula Bar. In the MoneyCentral worksheet, click >>

<< on the cell with the Apple price and press return. If you get confused, press escape and start over. When you've succeeded, the formula for the Apple price on the Portfolio worksheet should be **='Query Result!'D4**. That means your portfolio worksheet will refer to cell D4 in the Query Result worksheet to get the value that's stored there.

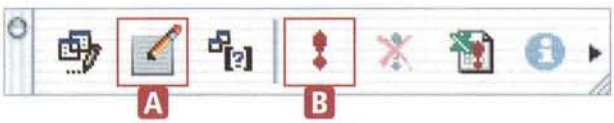


Repeat the process for the Microsoft stock, and you should see the current price from the Web for both stocks. The price will update when you open the file.

Because the data is now up-to-date, you will also replace the old January 1, 2001, date text with a function that returns the current date. Highlight the cell that shows the date. Type **=NOW()** B into the formula bar, and press return.

6 The Refresh that Pauses

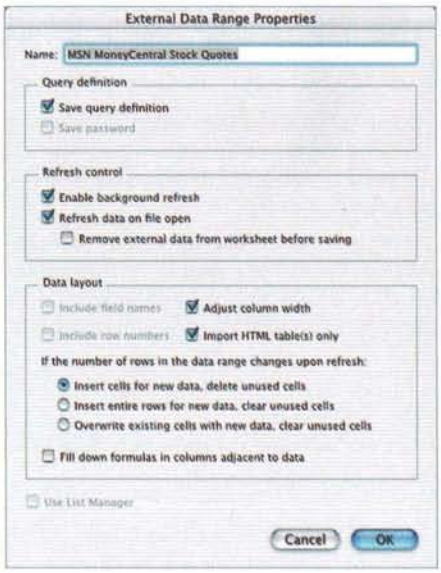
Now that you have a Web query associated with your Excel workbook, you need a way to manage this new element of your worksheet. Although you can't edit the query itself, you can change some of its properties (or get rid of it altogether).



In the previous step, you told the query to update automatically every time you open the file. But Excel will pause while retrieving the data, so if you have a slow dial-up Internet connection, you may want to refresh the data manually when it won't inconvenience you.

To change the auto-update setting, open the External Data toolbar (View: Toolbars) and click on the Data Range Properties button A to bring up the External Data Range Properties settings. Deselect the Refresh Data On File Open option. To refresh your stock data manually, click on the Refresh Data button B on the same toolbar.

The External Data Range Properties box also lets you delete an existing Web query from a worksheet; you might want to do this if you use a different presaved query. Simply deselect the Save Query Definition option and click on OK. (Excel will ask whether you're sure you want to delete the query.) Although this deletes the query, the data it put on your worksheet remains (although it won't be linked to the Web any longer), so you'll have to delete that as well by highlighting the cells and using the Delete command.

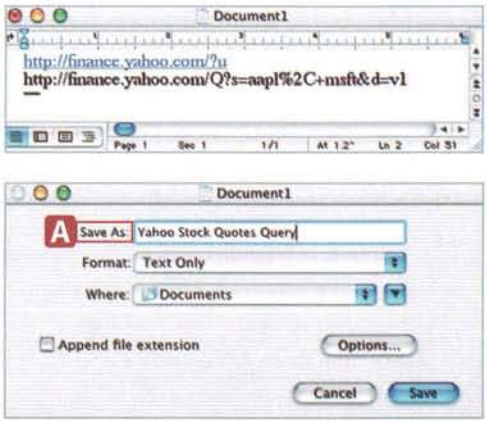


Now that you know how to select a Web query, you can experiment with the other queries Microsoft supplies and import data from other places on the Web. For example, you could use Microsoft's currency-value query to convert your dollars into euros.

7 Creating Your Own Query File

You can also create your own query files from scratch. Don't let the complexity of the Microsoft example put you off: most of the code in Microsoft's queries isn't necessary. In fact, all you really need is a valid URL saved in a Word text file.

Say you want to grab those Apple and Microsoft stock quotes from Yahoo's Finance page instead of Money Central. You simply open a new Word document, copy the Yahoo Finance URL from your browser's address bar, and type **http://finance.yahoo.com/q?s=aapl%2C+msft&d=v1**.



You don't need to worry about the arcane parameters in the Microsoft example file (such as **Consecutive DelimitersAsOne=True**); Excel sets them by default. The important thing is to save your query file as Text Only, using a Save As command A. You don't even have to save it in the Queries folder.

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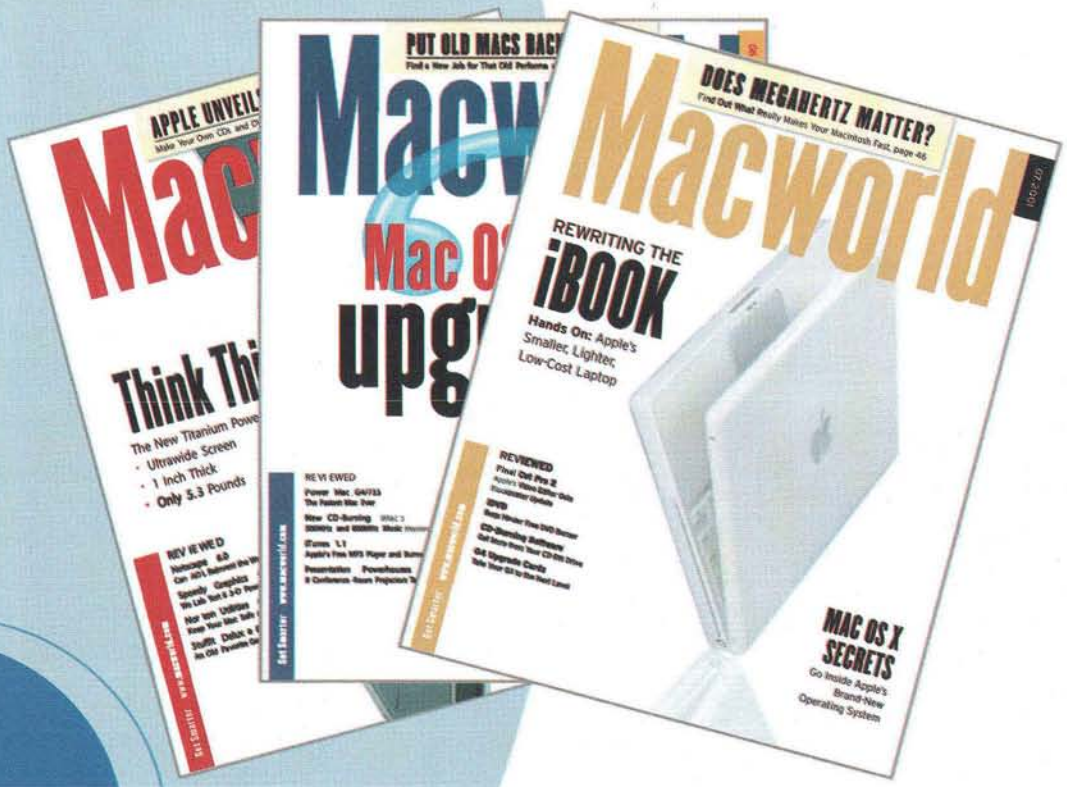

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Master Photoshop's Vectors

Thanks to the introduction of vector tools in Adobe Photoshop, you can now combine sharp-edged vector artwork with antialiased bitmaps to create extraordinary results. Here's how to get the most out of Photoshop's vector tools while avoiding common pitfalls.

Layer Clipping Paths

There's a common misconception that Photoshop 6 lets you draw vector artwork in a document. Actually, every vector shape you create in Photoshop—excluding type—is just a layer clipping path that has been applied to a bitmap layer (often filled with a solid color). Layer clipping paths perform the same function as layer masks—that is, they mask out some pixels and leave others visible. But while layer masks can be soft-edged, layer clipping paths always use a hard-edged line. And because the path is a vector, the line always matches the resolution of your PostScript printer.

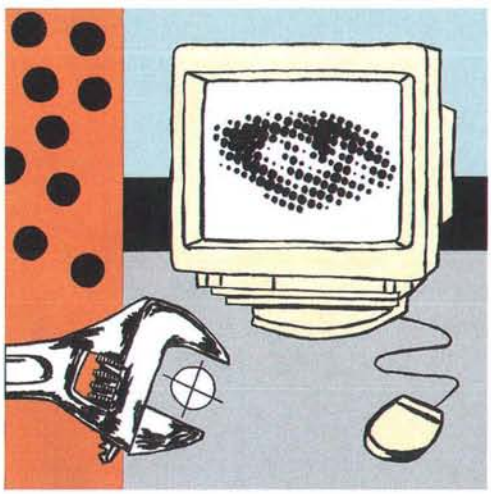


ILLUSTRATION BY MARK DANIELSON

Applying Vector Paths to Bitmaps You can apply a layer clipping path to any Photoshop layer. Say you want to place a bitmap of a beach scene inside your corporate logo but retain the logo's sharp vector edges. You could do this simply by pasting the logo from Adobe Illustrator into Photoshop (when Photoshop asks, tell it to paste the artwork as a path, not a shape) and then applying those outlines as a layer clipping path to your bitmap.

To convert an existing path into a layer clipping path, first select the path in the Paths palette. Choose the layer you want to affect—in this case, your beach scene—and then ⌘-click on the Add Layer Mask button in the Layers palette. Photoshop applies the path to the selected layer as a vector-based clipping path. You can then use the Direct Selection tool to edit the path's shape, revealing more or less of the underlying image. You can even apply layer effects—such as changes to opacity and blending mode, drop shadows, and so on—to your sharp-edged layer.

Once you've made a layer clipping path, you'll notice that its thumbnail appears in the Layers palette, looking suspiciously like a layer mask. You can distinguish a layer clipping path from a layer mask, however, by the small black vertical line to the left of the thumbnail (see "Clipping with Vectors").

Using Vectors with Adjustment Layers You can also apply layer clipping paths to adjustment layers—to make your vector logo appear as a duotone over a full-color bitmap, for example. To do this, follow the previously described steps to apply a layer clipping path to a Gradient Map adjustment layer located above the background image. In fact, if you create an adjustment layer while any path is selected in the Paths palette, Photoshop automatically assigns that path as a layer clipping path.

Inverting Your Paths One major annoyance you'll encounter in Photoshop is that there's no *easy* way to invert a layer clipping path after you've added it to a layer. There is, however, a way to do it.

With a layer selected, open the Paths palette and select the desired path. Next, select the path in the document window by ⌘-clicking inside the path with the Shape tool (you can also option-click on the path boundary with the Path Selection tool). Finally, click on either the Add To Path Area button or the Subtract From Path Area button (both are in the Options bar). If one doesn't invert the path, the other will.

Laying Bitmaps Over Vectors

I've always been fascinated by magazine covers like those you often see on *Time* or *Sports Illustrated*, with a bitmapped image of someone's head overlapping the masthead's vector artwork. But unless you owned a million-dollar prepress system, there was no way to create this effect on your desktop before Photoshop 6. Compositing the image in QuarkXPress necessitated having a harsh clipping path around the person's head—an unattractive option for curly or wispy hair. On the other hand, compositing it in Photoshop meant losing your text's sharp, resolution-independent edges.

Photoshop's vector tools now give you the best of both worlds—soft, antialiased bitmaps with crisp vector artwork. To produce this effect in Photoshop, position your type layer (or vector logo) above the background image of your subject. With the background layer selected in the Layers palette, make a rough selection around the area of the image you want to overlap the text—in this case, the top of the person's head—and press ⌘-J to copy it onto a new layer. In the Layers palette, drag this new layer and place it above the vector layer. Finally, remove any excess pixels from the topmost bitmap layer by adding a layer mask and using the brush tools to paint black over the portions that you don't want visible. Using a layer mask is better than simply erasing unwanted portions of the image, because you can paint pixels back in if you make a mistake (by painting the mask with white).

What You See

Although vectors can greatly simplify the way you work, they don't come without quirks. For example, while Photoshop always attempts to provide an accurate preview, you can't trust what you see on screen when it comes to vectors. If you magnify the edge of a vector line, you'll notice that the edge appears to be antialiased with the background, even though vectors should remain sharp at any magnification. So what's going on? Photoshop is showing you what the image *would* look like if you flattened it (losing the vector paths and leaving only pixels). If you want to see how vectors will look when printed on a PostScript printer, save a copy of your file in the PDF format and open it in Adobe Acrobat Reader.

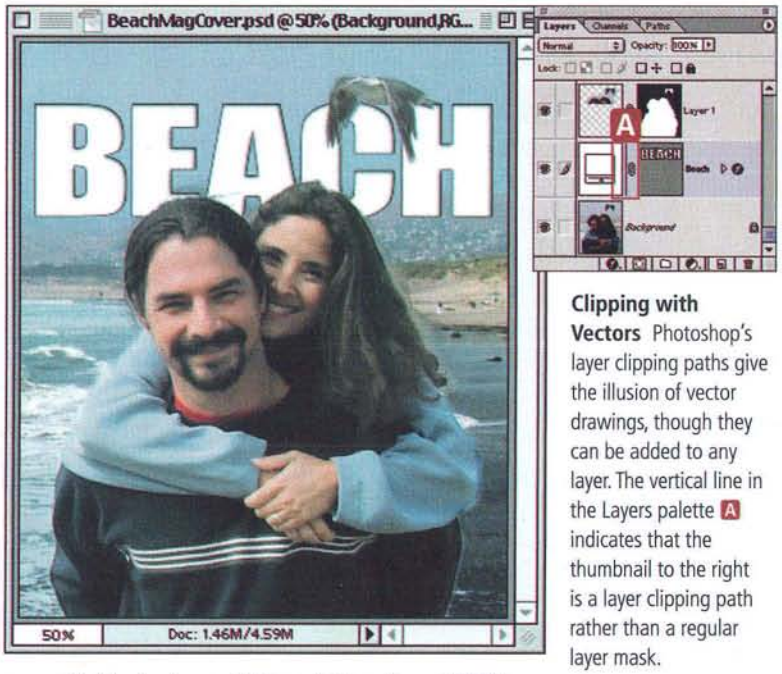
Saving Your Vectors

Although Photoshop lets you blend vector and bitmap artwork, getting your image out of Photoshop and onto the printed page isn't always as easy as it sounds. The key is knowing which file format to use and which options to turn on.

Looking Sharp The output quality of your vector art depends on your printer. Vectors are designed to be printed on a PostScript printer (either from Photoshop or from your page-layout program). You can print to non-PostScript printers, too, but you might not see the same hard-edged lines.

Choosing Your Format If you're printing your document from Adobe InDesign, XPress, or some other program, you need to save it out of Photoshop as an EPS, DCS, or PDF file. No other file format supports vector artwork. If you save it as a TIFF or JPEG file, for instance, it may *look* as though the vectors were saved, but in reality, Photoshop has flattened the image into a single layer of pixels—if you're counting on sharp-edged vectors, you'll be disappointed.

I prefer saving images with vector artwork in the PDF format, because PDF files are often smaller and print faster. But some programs won't read these files properly (for instance, XPress 4.X can't read PDF files created in Photoshop 6 or 7, although XPress 5.0 can). In those cases, EPS or DCS is best (use DCS 2.0 if your image also contains spot colors).



Clipping with Vectors Photoshop's layer clipping paths give the illusion of vector drawings, though they can be added to any layer. The vertical line in the Layers palette A indicates that the thumbnail to the right is a layer clipping path rather than a regular layer mask.

However, it's important to remember that Photoshop cannot retain the vectors if you try to reopen an EPS or DCS file in Photoshop—it automatically rasterizes the vectors to pixels. If you use the EPS or DCS format, save the original Photoshop file in a format that does retain the vector artwork when reopened (a native PSD file, for example), just in case.

Getting the Word Although Photoshop's type-handling features are almost as powerful as InDesign's, Photoshop doesn't save type as efficiently. If you save your layered file in the EPS format, Photoshop saves the type as incredibly complex clipping paths—as though the type were a layer clipping path. The more text there is, the more complex the clipping paths, and the longer your page takes to print.

You can avoid this by flattening your file or by deselecting the Include Vector Data option in the Save As EPS dialog box. But doing either turns the type into pixels at the resolution of your image (instead of maintaining the resolution-independent vectors). If you need sharp-edged type from Photoshop, and you're not using XPress 4.X, it's better to use the PDF format, which can save the font information itself instead of converting the text to outlines.

Mixing It Up

If you're simply placing text or a logo on top of an image, there's no reason to add it in Photoshop—you'd be better off adding those elements in a page-layout or illustration program. But when you really need vectors and pixels to interact, there's nothing like using Photoshop's vector tools to do the job. □

Contributing Editor DAVID BLATNER is a coauthor of *Real World Photoshop 7* (Peachpit Press, 2002) and *Real World InDesign 2* (Peachpit Press, 2002). You can find him at www.moo.com.

Control ViaVoice

If ViaVoice for Windows is Superman, then the slow and sometimes flaky ViaVoice for Mac OS X is Charlie Brown. But for OS X users who can't type or don't want to, this speech-recognition program is currently the only game in town (see *Reviews*, April 2002). Fortunately, you can make it faster, more accurate, and much more useful—with these tips.

Speed It Up

Although ViaVoice can "type" spoken words directly into programs such as Microsoft Word, Apple Mail, and AppleWorks, the program's speed doubles if you dictate into ViaVoice's stripped-down SpeakPad application. From there, you just say "Transfer to Microsoft Word," "Transfer to Apple Mail," and so on. ViaVoice briskly dumps your dictated text into the requested program. Take care to open the desired program first ("Open AppleWorks" or "Launch Microsoft Word"); otherwise, the "Transfer" command opens the recipient application, plants the cursor—and then stops. (If this happens, you can say "Paste this" to make ViaVoice take the last step.)

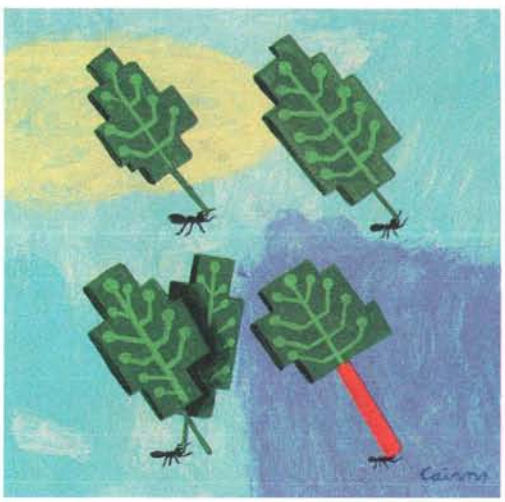


ILLUSTRATION BY BRIAN CAIRNS

If you want to move text from SpeakPad into a program not among the anointed few that work with the "Transfer" command (Word, AppleWorks, Mail, Eudora, Netscape, and Outlook Express), you can still perform this kind of transfer by voice. Just say, for example, "Select all, cut this, open TextEdit, paste this." ViaVoice can launch any program in your Mac OS X Applications folder—just say "Open Chess," or whatever the program's name is. (You must say "Launch" for a few applications, such as Word.)

If you're technically inclined, you don't have to go through all that rigmarole. Instead, you can write an AppleScript that does it all in one fell swoop. To get up-to-speed, check out "AppleScript for the Programming-Shy" (*Secrets*, November 1999). Put the AppleScript in your Applications: ViaVoice: Utilities: Command & Control: Scripts folder. Then you can trigger it just by saying its name.

Make It More Accurate

When you start using ViaVoice, its most disconcerting aspect may be its attempts to transcribe random sounds as words. *(If your the first attempt to of dictate comes out something like of this, you wouldn't if be alone.)*

Try positioning the microphone at the side of your mouth, instead of in front of it, to prevent ViaVoice from mistaking your breath for words such as *a* and *the*. Also learn to ride the microphone's on/off switch: the F8 key. Turn off the mike for phone calls or throat clearing. (To change this shortcut, say "Open Preferences," choose Microphone, and select a new function key from the To Activate Speech pop-up menu.) If you're in a very noisy environment, though, you may still have trouble.

When you dictate into SpeakPad, ViaVoice's accuracy improves over time: whenever you make a correction, ViaVoice learns from it. When you dictate into other programs, you can't make corrections at all—therefore ViaVoice's accuracy never improves.

If, when studying ViaVoice's transcription to check for errors, you can't remember what you said, use the Dictation: Playback Selection command, which plays back a recording of your voice speaking the selected text.

If you're still not getting worthwhile accuracy, open the ViaVoice Setup Assistant program, in your Applications: ViaVoice folder, and read a few more scripts (as you did when you first set up ViaVoice). As you read more, the software learns to recognize the characteristics of your voice. You can also use the Analyze My Documents feature of ViaVoice Setup Assistant. This tool lets you select, from your hard drive, documents of the sort you regularly write. The procedure not only teaches ViaVoice new terms but also exposes the program to the order in which words appear in your writing. It updates the software's prediction routines, further improving accuracy.

Finally, don't miss the slider beneath the Performance tab of the ViaVoice Preferences program (say "Open Preferences," and choose Performance). To

get better overall accuracy, drag the slider to the right, toward Exact Match. You will wait a fraction of a second longer for phrases to be transcribed, but this may prove to be a worthwhile trade-off.

Use Macro Power

One of speech-recognition software's biggest productivity payoffs comes from dictation macros. You say "Buzz off" into your e-mail program, and the software types out "Thank you so much for considering me for your 'Earn $5,000 a Week Working at Home!' program. Unfortunately, I'm already extremely busy taking low-life spammers like you to court."

To create a dictation macro in ViaVoice, dictate or type the words you want the program to type, and then highlight the text. Say "Create macro." In the Macro Name field, type the shorthand phrase you want to use as the trigger. Finally, click on Save.

This phrase editor also provides a great deal of control over how ViaVoice transcribes certain words, including the spacing and capitalization of each utterance. You can use this to your advantage. If you grow frustrated at having to say "Capitalize this" before each capital letter, for example ("Capitalize this, The; capitalize this, Wizard; of; capitalize this, Oz"), open the macro editor (say "Create macro" *without* highlighting text first). When the list of macros appears, type a shorter command, such as **Cap** or **Shift key**, in the Macro Name field. Then click on the Capital radio button, so that words you dictate after saying your macro name will be capitalized. Click on Save.

Maintain Keyboard Control

Keyboard Shortcut Dictionaries (KSD) Editor, a program in the ViaVoice: Utilities folder, lets you set up vocal triggers for any keystroke. Using this technique, you can voice-enable menu commands.

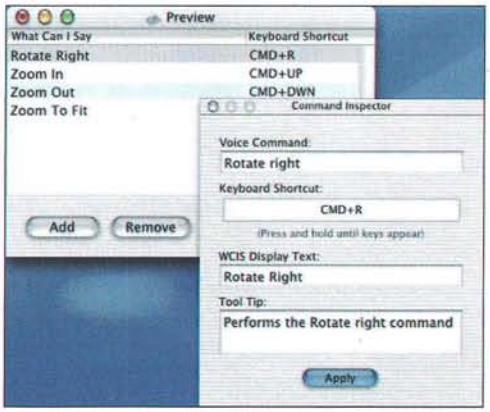
Suppose you want to create voice commands for the Rotate Right and Rotate Left commands in Mac OS X's Preview program. Open KSD Editor by saying "Open KSD Editor." Click on Select, and browse to find Preview in the Applications folder. Click on Open. Type **Preview** in the text field to name your new voice set. Click on OK. Then click on Add to open the Command Inspector dialog box.

Then fill out the dialog box (see "Keystroke Launcher"). In the Preview program, Rotate Right and Rotate Left correspond to ⌘-R and ⌘-L, respectively. Save the resulting document in the Library: Application Support: ViaVoice: Utilities: Menus folder. (Note that you have to quit and restart the VoiceCenter program before your new voice command will work.)

You can take ViaVoice's keystroke-triggering feature even further in programs that have their own macro features, such as Word. By assigning an unused key combination to a Word macro, you can voice-enable almost any complex series of word-processing steps. For example, you can create a Word macro that cleans up text copied from an e-mail message (see "Teach Word New Tricks," *Secrets*, April 2002), assign it the keyboard shortcut shift-F12, and use KSD Editor to attach a voice command to that shortcut.

If the menu command you want doesn't have a preassigned keystroke, you can use a utility such as CE Software's $60 QuicKeys X (800/523-7638, www.ceosoft.com) to give it one.

Once you're familiar with KSD Editor, you can use its Open command to customize some of the commands that come with ViaVoice, the better to reassign or delete them. (All the commands are contained in files that have a *.ksd* extension. They're in your Library: Application Support: ViaVoice: Utilities: Menus folder.) And you can share your voice commands with a less industrious friend—KSD files can be copied.



Keystroke Launcher
Make ViaVoice do your vocal bidding by creating voice triggers for menu commands in programs you use often. You can also create spoken commands for useful systemwide shortcuts: "Cancel" to trigger the ⌘-period (.) key combination, for example.

Boast Better Looks

ViaVoice's amoeba-shaped VoiceCenter window fits in with the OS X design scheme but takes up plenty of screen space.

By clicking on the Zoom button—the green plus-sign (+) globule in the left-hand corner of the window—or saying "Zoom VoiceCenter," you can hide the gigantic IBM logo and turn the palette into a far less conspicuous flying saucer. By clicking on the Minimize button—the yellow minus-sign (–) globule—or pressing ⌘-M, you minimize the palette to your Dock (it's still "live," changing color as you dictate).

You can also adjust the transparency of the VoiceCenter window. Open the ViaVoice Preferences program ("Open Preferences"), choose VoiceCenter, and adjust the transparency slider.

Voices of the Future

If you want to go beyond the tips offered here, seek out the active community of speech-recognition users willing to help—start by checking out the MacVoice listserv group (www.themacintoshguy.com/lists/MacVoiceFAQ.html). And keep an eye out for OS X programs from the Mac's other developer of speech software, MacSpeech (www.macspeech.com).

Speech recognition in OS X is, like the OS itself, still in its fledgling state. But when configured properly and used shrewdly, ViaVoice can bring useful dictation and application control to your Mac. □

Contributing Editor DAVID POGUE writes the weekly technology column *State of the Art* for the *New York Times*. His latest book is *Mac OS X: The Missing Manual* (Pogue Press/O'Reilly, 2002).

Many Users, One Mac

Unlike earlier versions of Mac OS, OS X was designed to be a multiple-user environment. Even if you're the only person who uses your OS X machine, you can benefit from the extra security a user account provides. More significantly, if you're not your Mac's only user, having multiple user accounts gives you flexibility and security not possible before.

May I Have Your Permission?

The first step in understanding user accounts is understanding permissions. If you've used OS 9's File Sharing or Multiple Users, you're probably familiar with the concept, but OS X introduces Unix-style permissions to the Mac world. OS X keeps track of who can open and who can edit (or who has "read" and who has "write" privileges, respectively) each document and application. While OS 9's File Sharing privileges apply only to remote users, OS X's privileges apply to everyone, local and remote.

In Unix, viewing and setting file permissions is an ugly affair. You can use OS X's Terminal application to work with permissions, but that's mostly unnecessary. Instead, you can view a file's privileges simply by selecting a file in the Finder, choosing Show Info from the File menu, and then choosing Privileges from the window's pull-down menu. The resulting display shows the file's owner (the user with ownership rights to the file) and group (the users who in some way have access to the file), as well as the file-specific privileges given to the owner, the group, and everyone else (those users who have neither ownership nor group access to the file). The file's owner can use pull-down menus to change these privileges. (Both the owner and a user with administrative access can change privileges through Terminal or by using a third-party utility.)

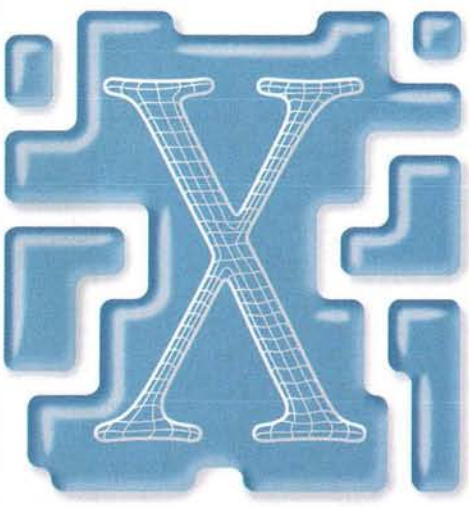


ILLUSTRATION BY CHRISTOPH NIEMANN

These permissions provide control over who can read and edit (write) every file on your hard drive. Now that you understand permissions and privileges, we can talk about why they exist—user accounts.

Get Used to Users

When you install OS X, you're prompted to create an account and provide a password. This is your user account, which is assigned administrative access by default. After this initial setup, you won't need to enter any information at start-up (though you can change this if you wish). You can leave your Mac set up with only this single user account and let other users share the account, but if you do, all of your files will be accessible to anyone who uses the computer. In addition, you'll miss out on the security, flexibility, and power that multiple accounts bring to your desktop. Let's take a brief look at these advantages.

By default, each user in OS X has his or her own home folder (located at the root level of the boot volume, at Users: *username*). Documents and other files (applications, MP3s, preferences, and so forth) stored in your home folder are for your eyes only; unless you explicitly change those files' permissions, no one but you will be able to read or edit them. In fact, the desktop in OS X is actually a Desktop folder located within your home folder—anything you save or move to the desktop will also be inaccessible to other users (unless permissions have been changed).

In addition to these security advantages, user accounts provide an impressive amount of flexibility in allowing users to customize the OS. Each user's *individual* settings—login picture, desktop background, Microsoft Word preferences, e-mail account information, and so on—are stored in his or her home folder. This means that each user's preferences will be activated at login. For a family with multiple users, this can be a godsend—no more reorganizing your desktop icons because Sally's games change the screen resolution, and no more changing the desktop to avoid looking at Susie's 'NSync picture while you surf the Web.

One clever use of multiple accounts is to create an extra user account, one that you do not alter, for troubleshooting purposes. If you're having problems (such as crashing applications or a frozen OS), you

can log out of your personal account and log in to the troubleshooting account. If the problems disappear, there's something wrong with your personal account; if the problem persists, chances are it's a problem with the OS itself. Similarly, if you'd like to try out some new or beta software without worrying about messing up your personal account, you can create a testing account. If the software causes any problems, only the testing account will be affected.

Multiple Personalities

Creating new users in OS X is easy, but you need administrative access to do so. (As previously mentioned, the first person who sets up an account under OS X is automatically an administrator.) Go to the Users pane of System Preferences (available from the Apple menu or the Dock), and click on the New User button. Fill in the person's full name, nickname (which becomes the home folder's name), and password (which the user can change later). You can also opt to give the new user administrative access, but remember to use this option sparingly—it's akin to handing someone your most confidential documents.

Sharing the Wealth

User accounts provide security against other people accessing your files, but sometimes you *want* to provide access to others. There are a few ways to do this in OS X. First, Apple has provided a common folder for sharing files, called, appropriately enough, the Shared folder. It's accessed via the Users directory, but unlike the contents of standard home folders, what's in Shared can be seen by *everyone*. And files created in the Shared folder are automatically set to allow read access to everyone. Files created elsewhere and then moved to the Shared folder, however, retain their original permissions—if you create a document in your home folder and want others to be able to open it, you'll need to change its permissions after you move it to the Shared folder.

The second way to share files with others is by using your Public folder. Located inside your home folder (Users: *username:* Public), this directory is the only personal folder that can be viewed by other users—they have read access to its contents. Inside the Public folder is a Drop Box folder, which provides even more security. If another user places a document inside your Drop Box folder, only *you* will be able to see it. Likewise, if you drop a file in another user's Drop Box folder, only that user will be able to see the file you dropped. You can't edit or view a file that you place in another user's Drop Box—it's like dropping a letter into a mailbox.

So what's the difference between the Shared folder and each user's Public folder? It comes down to remote access. With OS X's File Sharing enabled, only non-admin users connected remotely are able to view Public folders—the Shared folder and every other folder are inaccessible. So if you want others to be able to view your files remotely, make sure you put them in your Public folder.

Feeling Privileged
This document can be read and edited by the owner and read by people in the group, but it's inaccessible to everyone else.

Regardless of where a file is created, only its owner can edit it. If you want to share a file with others and allow them to edit it, you must give them write privileges. The easiest way to do this is to give everyone read and write access and then drop the document in the Shared folder.

Finally, in addition to user permissions, OS X supports group permissions—a way to provide a selected group of users with access to specific folders or files (including applications). Unfortunately, setting up groups and group privileges is not as easy under OS X as creating user accounts and assigning user permissions. For a quick tutorial, check out www.macobserver.com/tips/hotcocoa/2001/20010427.shtml.

(In)Secure Storage

As a general rule, files take on the permissions of the folder in which you initially create them. Where this can become a security issue is with multiple volumes, since the default permissions for nonboot volumes (a second partition or hard drive, a removable volume such as a FireWire drive, or a Zip disk) give everyone read access. So be aware that saving documents to a nonboot volume is just like saving them to the Shared folder. If this is a concern, you can always change the permissions for the entire volume, for individual folders on the volume, or just for individual files. You can also create files inside your home folder and then copy them—the files will retain their original permissions.

User Power

Multiple accounts can be a powerful tool for file and folder security, as well as for troubleshooting, flexibility, and convenience. Now that you understand user accounts and how to manage them, you're ready to become the true administrator of your Mac. □

More Info:

For more on Unix-style users and security, check out http://developer.apple.com/internet/macosx/securityintro.html.

DAN FRAKES writes about the Mac, he's a consultant based in foggy California, and he is still searching for tabbed and pop-up windows in Mac OS X.

Digital-Hub Revival

Like the big wheel latched to John Fogerty's *Proud Mary,* Apple's digital-hub strategy keeps on turnin'—if not always burnin'. To help you keep your i-products chooglin' as Apple intended, this month's *Mac 911* offers advice about three spokes in Apple's wheel—iTunes, iDVD, and the iPod. Not content to stop there, I also help clear the water in regard to AOL compression, Entourage identities, and AppleWorks magnification.

ILLUSTRATION BY FELIX SOCKWELL

Tracking Tunes

I love the iTunes feature that retrieves track names from the Web. But how do I keep the tracks in the CD's playing order as opposed to alphabetical order? As soon as iTunes saves the album of MP3s into a folder on my hard drive, they appear alphabetically, and I have to type in all the track numbers. If I make a playlist, I have to type them in a second time.

Sean Harris, *Columbus, Ohio*

If the tracks appear to be out of order in iTunes, try clicking on the Album heading. Once the tracks are organized by Album, you may discover that they appear in reverse order—the last track first and the first track last. To put things right, simply click on the tiny triangle in the Album column heading to reverse the track order.

The order in which tracks appear in the Finder has no influence on how they appear in iTunes. I can think of only one situation in which Finder order makes any difference: when you use Apple Disc Copy to burn MP3 files to an MP3-formatted CD.

In such a case, if you drag and drop those MP3 files to the CD image on your desktop, the tracks will indeed appear in alphabetical order. To change this list in the Finder so that it appears as it does on the album, switch to List view and sort the tracks by Date Modified—because the first track was burned earliest, it will appear first in the list, followed by the second track, and so on. Regrettably, the tracks won't remain in this order when you move them to the CD.

To keep the tracks in album order, you must first organize the tracks by Date Modified and then number each track sequentially. For example, append **01** to the first track, **02** to the second, and so on. Even though you can do this manually, a program such as Frank Reiff's $15 shareware application A Better Finder Rename (www.publicspace.net/ABetterFinderRename) will automate the process.

I Boot from iPod

I have read repeatedly about the possibility of putting a bootable version of OS 9 or OS X (or even both) on an iPod. How do I do this without damaging the music part of it? And how do I boot from an iPod?

Sebi Meyer, *Macworld Forums*

As we used to say in the funked-up seventies, "Ain't no thang." (For those of you who aren't hep to this jive, it means "this isn't a big deal.") Just attach the iPod to your FireWire Mac. If iTunes 2 doesn't pop open on its own, launch it. In the iPod Preferences window, select the Enable FireWire Disk Use option.

Now restart your Mac. Once your iPod has mounted, insert an OS installation disc (either Mac OS 9.2 or OS X) and run the installer. When the installer asks where you'd like to install the operating system, navigate to the iPod and click on Continue to step through the rest of the installation. When you want to boot from your iPod, plug it into your Mac. Once it's mounted, select it as the start-up disk in OS 9's Startup Disk control panel or in OS X's Startup Disk system preference. Restart your Mac to boot from the iPod.

Substitute SuperDrive

I have a 733MHz Power Mac G4 with an internal CD-RW drive. I'm interested in burning my own DVDs. My computer includes a copy of iDVD, even though it did not come with the SuperDrive. If I buy a Pioneer DVR-A03 drive (it's the same as the SuperDrive), will it work with iDVD?

Joseph Minio, *Rye, New York*

According to Apple, no. The company's iDVD 2 FAQ explicitly states that "iDVD 2 is designed to work only with the Apple SuperDrive available on certain configurations of Power Mac G4 computers."

To which I say, "Fiddlesticks."

A host of people I trust implicitly (some of them employed by this very magazine) have replaced the DVD-ROM drive on their AGP Power Mac G4s with a Pioneer DVR-A03 (310/952-2000, www.pioneerelectronics.com) and use it with the original iDVD, iDVD 2, and DVD Studio Pro without difficulty. You can also use Roxio's Toast to burn data to DVD-R discs with this drive.

As we go to print, the DVR-A03 is selling for a little over $400. Pioneer has released an updated drive, the 104. When this drive starts shipping in quantity (it currently ships in the new iMac), you should see the price of the A03 drop.

This hasn't been a hitch-free operation for everyone, however. In early models of the Pioneer drives, some users had to update the firmware to version 1.65 (this update is available on Pioneer's Web site, but you'll need the assistance of a PC running Windows to install it). If you purchase such a drive now, the firmware version should be compatible with your Mac. And the drive—just like the SuperDrive—is anything but a speed demon. Shove this type of drive into your Mac, and you'll find that it copies data to your hard drive far more slowly than your old media drive did.

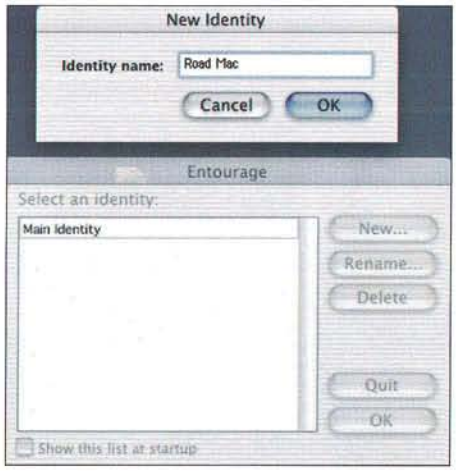
Sync Different

A client of mine using OS X needs to synchronize his Entourage e-mail, calendar, and contact data on the iBook he carries on the road and the iMac in his office. Data changes on both machines when he's traveling (he works on the iBook and his assistant uses the iMac), so rewriting one of the files completely (as OS 9's File Synchronization would do) is not an acceptable route. I'm stumped. Any ideas?

Jason Tertadian, *Madison, Wisconsin*

You mean other than contacting Microsoft and suggesting that future versions of Entourage let you import only *new* data from a copy of Entourage running on the network? Well, yes, I have an idea, but it may seem clunky.

In order for these two Macs to collaborate, you must create two identities on each of them—one for the stay-at-home iMac and one for the footloose iBook. It just so happens that Entourage (as well as Outlook Express) allows you to create just such multiple identities. To create a new identity in Entourage for OS X, select Switch Identity from the Entourage menu (in pre–OS X versions of both Entourage and Outlook Express, you'll find this command under the File menu). When you're greeted with the "Are you sure you want to switch identities?" message screen, click on Switch. In the resulting dialog box will be a list of your current identities (if there is only one, it will be called Main Identity). You'll also see the New button. Click on this button to name and create a new identity, and click on OK (see "A Whole New You"). Up pops the Setup Assistant, asking you for the settings necessary to send and retrieve e-mail.



A Whole New You
Maintaining multiple personalities might be the key to synchronizing manifold Macs with Entourage.

When you come back from your next trip, you can go to the home directory of each Mac and open Documents: Microsoft User Data: Office X Identities. (If you are running Outlook Express or Office 2001 in OS X's Classic mode, look for Identities or Office 2001 Identities, respectively.) Copy the appropriate identity to the same folder on the other Mac. In this case, you'll copy the iMac identity to the iBook and vice versa.

When you perform this copy operation, you'll overwrite the original files. If for some reason you don't want to lose those originals, you should move them to another location before you start copying.

You will now be able to read the other computer's e-mail or look at new contacts and calendar events by switching identities. Unfortunately, moving data back and forth *between* identities is anything but elegant. For e-mail, you can select all new messages, drag them to a folder on your desktop, switch identities, and then drag them back into the appropriate mail folder (Inbox, for example). Calendar events are even goofier. Drag all new calendar events into a folder on the desktop, switch identities, return to the Finder, select all your events, and then double-click on them. This process will open each event in a separate Entourage window and place it in the current identity's calendar. To move Address Book entries, once again you drag new entries to the desktop, switch identities, open Entourage's Address Book, >>

TIP OF THE MONTH

If your printer works in Classic mode but not in OS X, yet you long to print your documents using OS X's beautiful Futura and Didot fonts, here's a way to print them:

In your OS X application, select Print from the File menu, and click on Preview in the resulting dialog box. Doing so opens your document as a PDF file. Select Save As PDF from Preview's File menu.

You can now open and print your document in any classic application that reads PDF files (Photoshop, GraphicConverter, or Acrobat Reader 4.0, for example).

Kate Wheeler, *Boston, Massachusetts*

UNSOLICITED ADVICE

After putting together the video introduction to a recent *Macworld* CD, the disc's producer contacted me and said that we had to change a couple of blocks of static text that appeared in this QuickTime movie. Could I think of a way to swap out the old text without interrupting the soundtrack? But of course. Here are the very instructions I provided the producer:

Create the new block of text, take a screenshot of it so you can save it as a graphics file, and use QuickTime Player Pro 5.X to import that graphics file into a QuickTime movie. Press ⌘-A to select the movie's entire contents and then ⌘-C to copy those contents. Now open the original movie, select one frame before the offending piece of video, and while pressing the shift key, drag until one frame after the clip (you can use the keyboard's right- and left-arrow keys to move one frame forward and backward, respectively).

Select Add Scaled from the Edit menu to replace the old text with the new. Save the movie, and you're done.

Why not choose the Replace command, which also appears in the Edit menu? That won't work because this command replaces not only the video portion of the movie but also the soundtrack. Add Scaled replaces only the selected video and leaves the soundtrack in place. In fact, if the clip you're adding contains a soundtrack, Add Scaled layers that soundtrack atop the original.

And here's a bonus tip: You can turn off the second soundtrack by selecting the Disable Tracks command from the Edit menu and clicking on the On button next to the second soundtrack. To remove that second soundtrack completely, select Delete Tracks from the Edit menu, select the unwanted track in the Delete Tracks window, and click on the Delete button.

<< and then drag the names into the upper pane of the Address Book window.

Zip-a-Dee-Doo-Dah

I use America Online as my ISP, and whenever I try to send more than one attachment by e-mail, the files get compressed into a StuffIt archive. This causes problems for my PC-using friends. Can I prevent this from happening?

John Eddy, *Virginia Beach, Virginia*

Regrettably, no. You have to remember that AOL is the Internet with training wheels. With the best intention of keeping you from wobbling and falling over, AOL's software automatically performs certain functions—such as compressing multiple attachments. This can be very helpful for those new to computing and the Web, but savvier users who prefer to dictate their software's actions often find themselves thwarted.

Although AOL lets you choose not to compress a single attachment, once you drop another attachment into the message, you're stuck—you can search from one end of AOL's Preferences window to the other, and you'll find no way to switch off this "feature."

You could, of course, recommend to your PC-packing pals that they download the PC version of StuffIt Expander from www.stuffit.com/expander (and honestly, if they have any interest in remaining your friends, they really should). But if you're the kind of saintly individual who prefers to shoulder these burdens yourself, you might consider compressing your files in the PC-friendly Zip format and then attaching that single archive to your outgoing message.

There are a couple of ways to do this. Aladdin, the maker of StuffIt Deluxe (831/761-6200, www.aladdinsys.com), bundles StuffIt Expander, DropStuff, DropZip, and DropTar in a perky little $50 shareware package called StuffIt Lite, which works with OS 9.2 and earlier and OS X. To create a Zip archive, simply place the items you want to attach into a folder, and drop the folder onto the DropZip icon. If you want to use the more full-featured StuffIt Deluxe, which lets you do this kind of thing via a handy Finder menu or contextual menu in OS 9.2 and earlier and OS X, pay a visit to Aladdin's Web site, where StuffIt Deluxe is available for an additional $10.

Alternatively, you can try the $20 ZipIt shareware program (www.maczipit.com), by Tom Brown. Like DropZip and StuffIt Deluxe, ZipIt creates Zip archives that a Windows PC can open. ZipIt also includes an option that lets you create self-extracting Zip files. I had some difficulty creating ZipIt archives that decompressed on a Mac running OS X, but self-extracting archives encoded for the PC expanded properly on my PC running Windows ME.

More on Magnification

Regarding your answer to the "AppleWorks Amplified" question (*Mac 911*, January 2002), how do you choose document magnification of 150 percent? The only available magnifications at the bottom of the AppleWorks page are 100 and 200 percent.

Eric Spain, *Hong Kong, China*

Eric, please don't kick yourself when you learn how simple this is. It's a feature that even seasoned AppleWorks users routinely miss. If you click and hold on the button that reads 100, you will be rewarded with a pop-up menu that displays a variety of magnifications. You'll notice an entry labeled Other at the bottom of the list. When you select Other, the View Scale window presents itself. In this window, you can enter any magnification from 3.125 to 3,200 percent. □

Contributing Editor CHRISTOPHER BREEN intends to shamelessly hawk his hilarious and helpful tips-and-troubleshooting-for-the-rest-of-us tome, *Mac 911* (Peachpit Press, 2002), until it cracks Amazon's Top 10,000.

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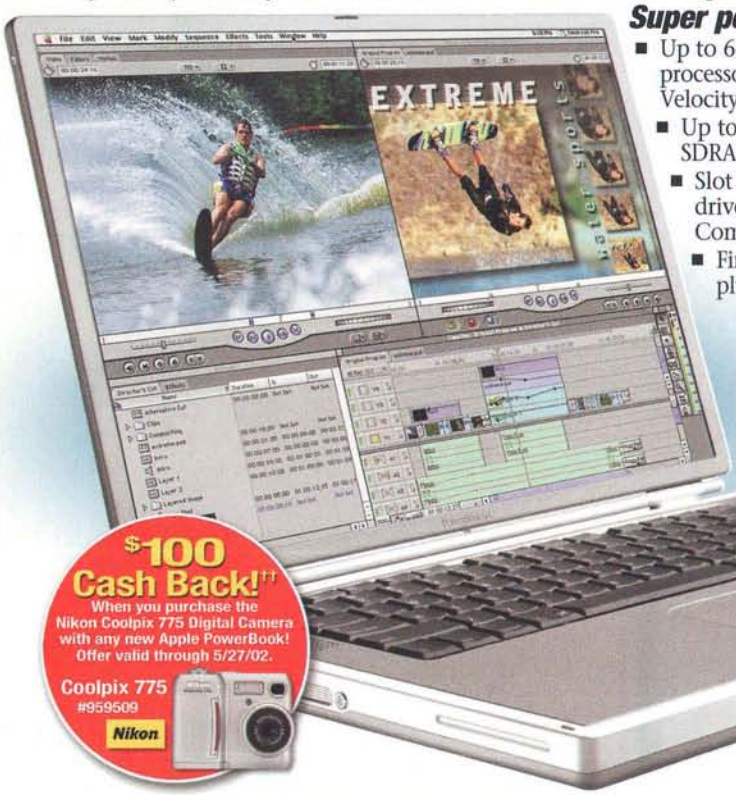

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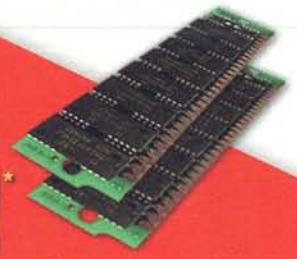

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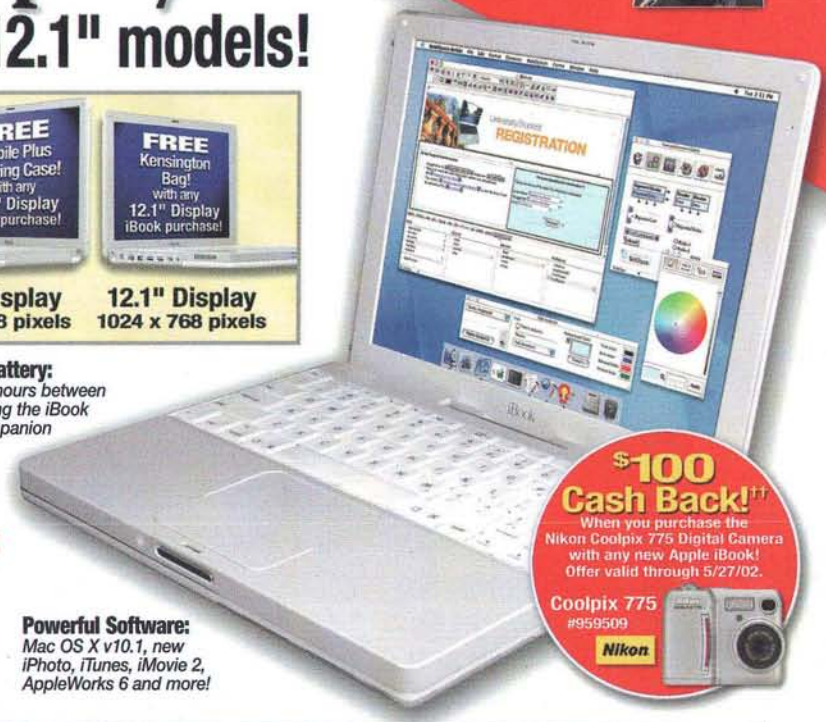

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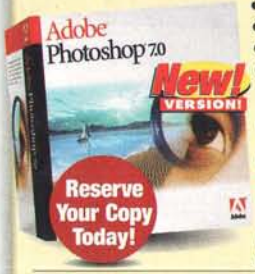

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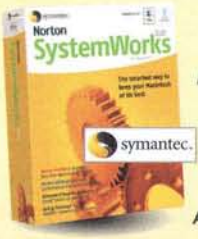

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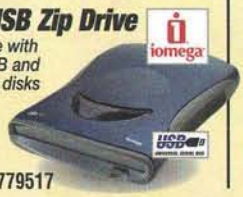

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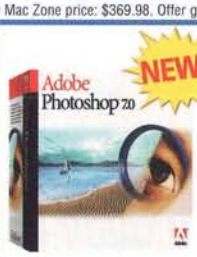

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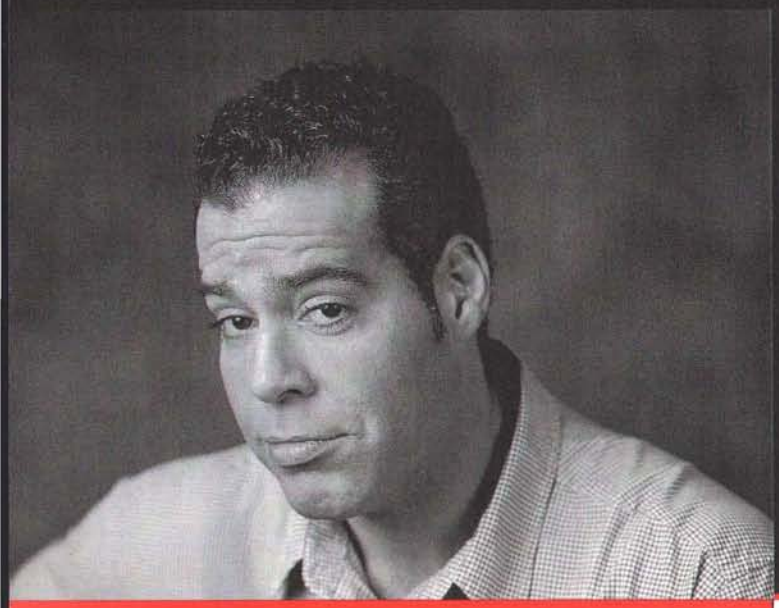

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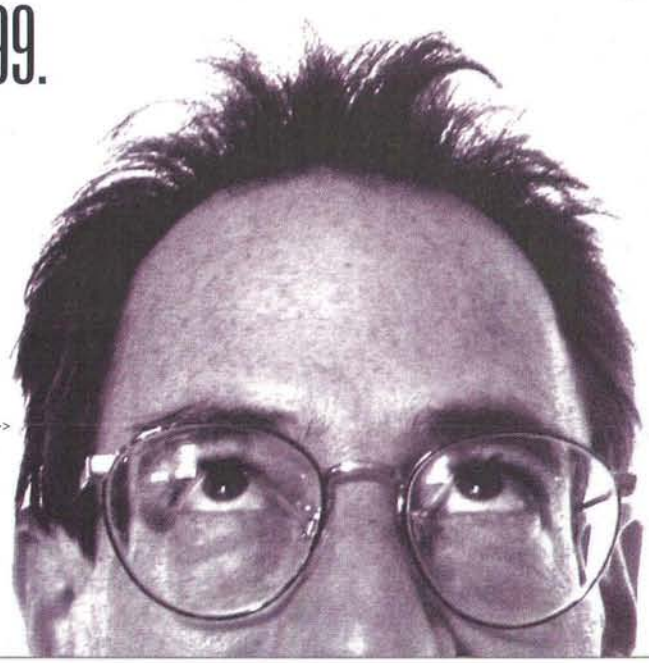

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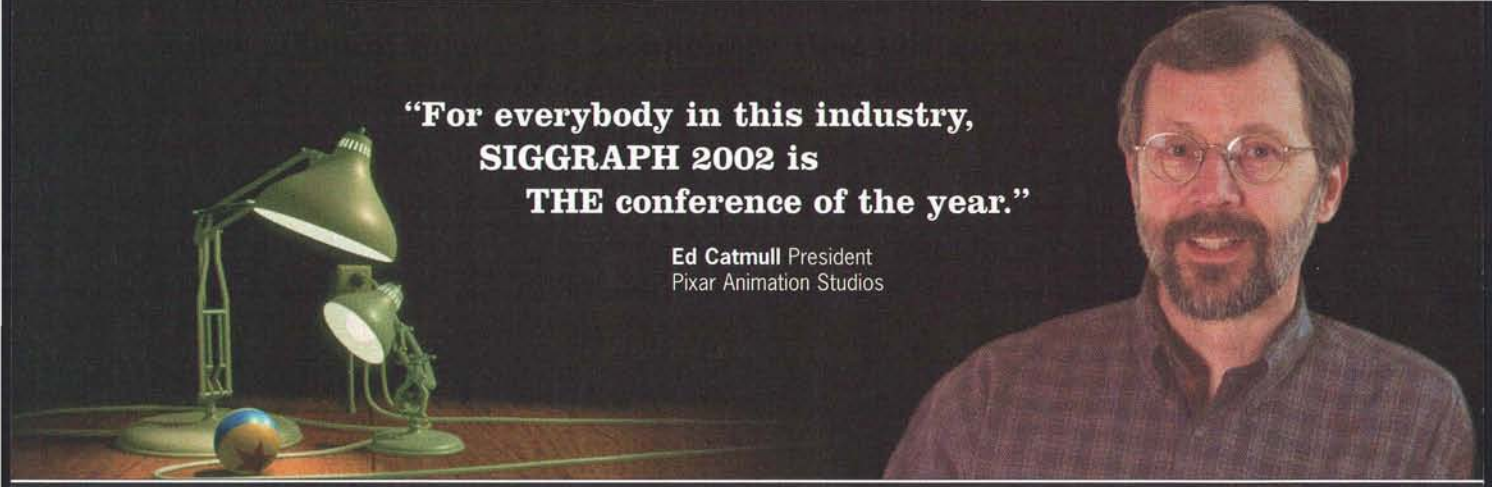

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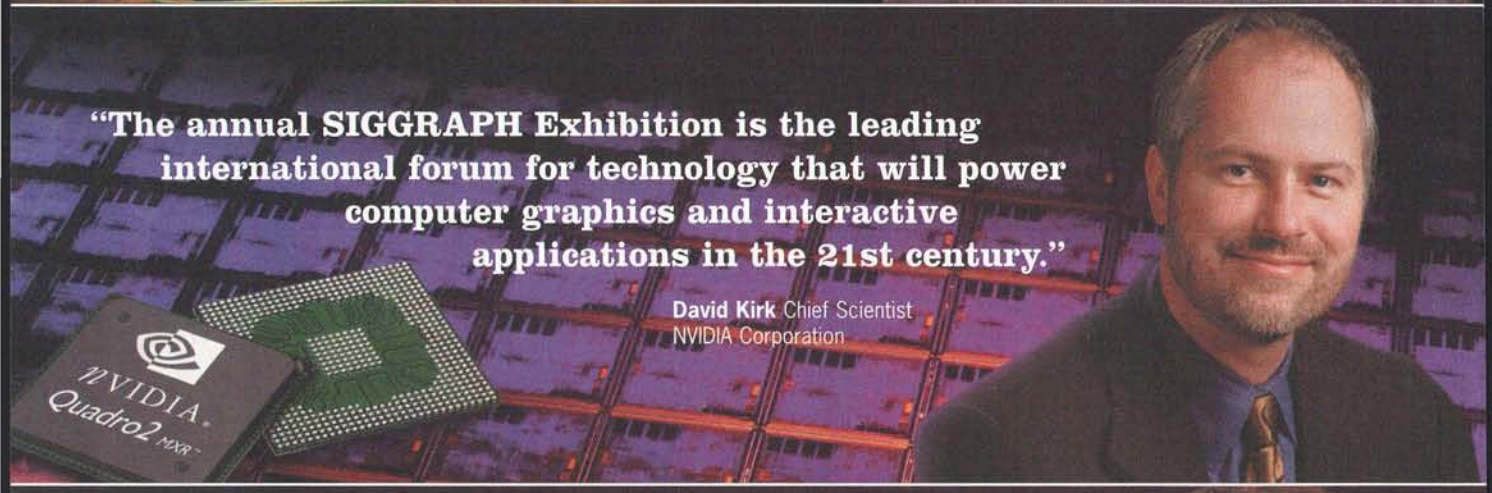

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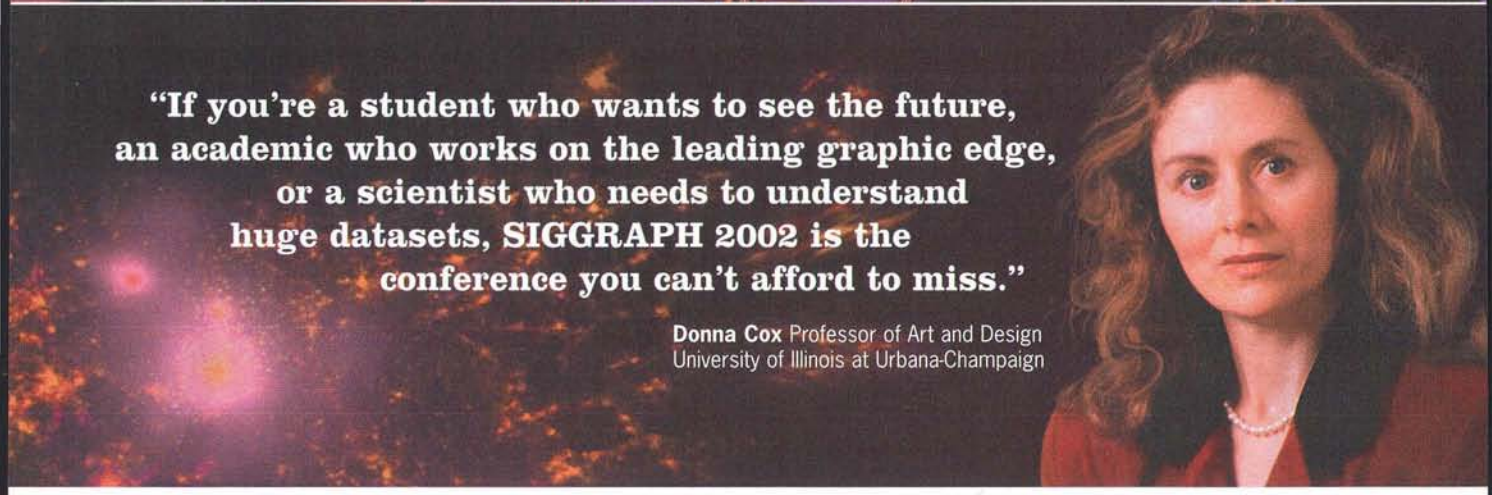

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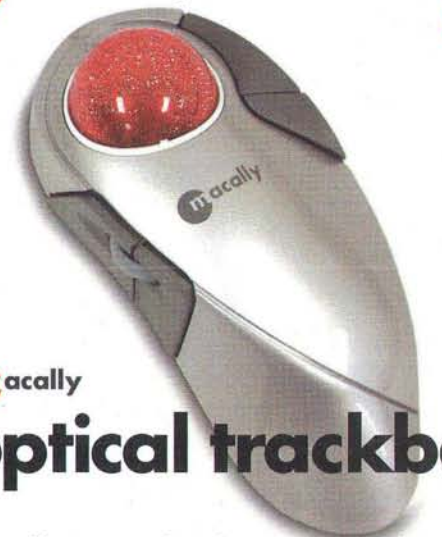

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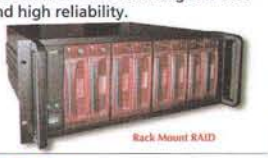

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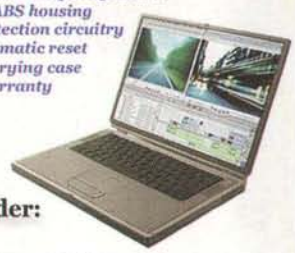

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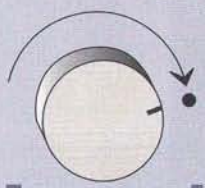

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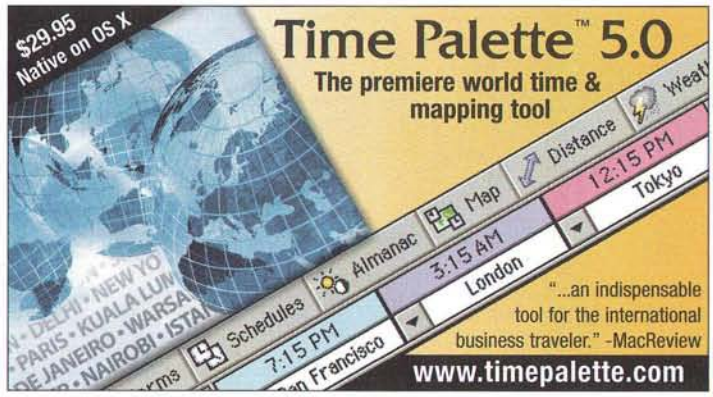

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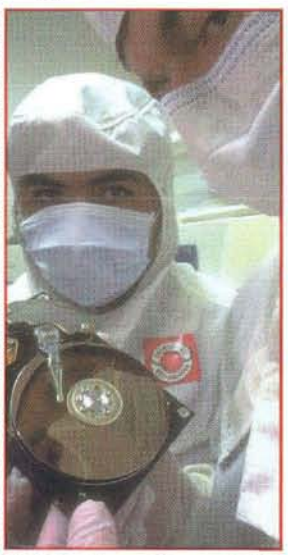

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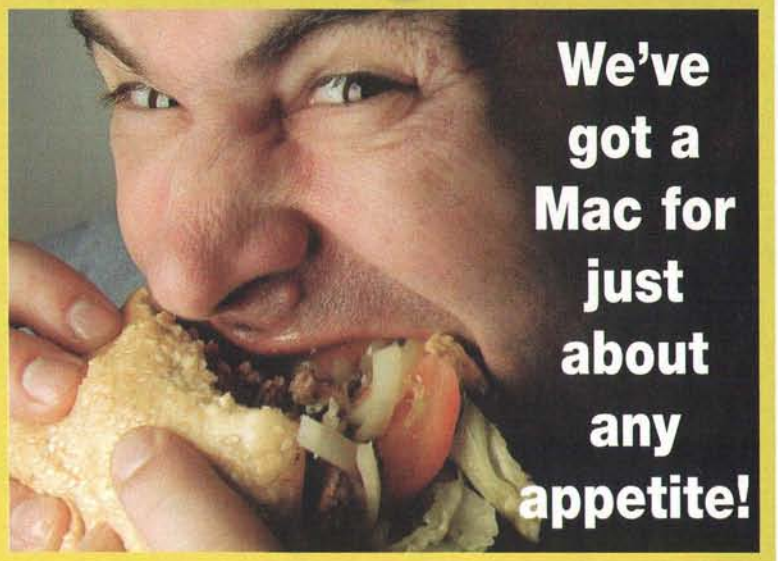

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ANDY IHNATKO

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Open-source software is like independent filmmaking. It can produce unique fits of splendid brilliance like *Clerks* or *American Movie* but not a sprawling, polished, crowd-pleasing epic like *The Lord of the Rings.*

The Open-Source Threat

I can't help but think about the folks at Microsoft, though. They're worried about how they're going to sell software in the future. People have a tendency to buy an app once and then, irritatingly, never buy upgrades. For that reason, Windows XP contains an infrastructure that turns Microsoft's operating system and applications into subscription services requiring online renewal every now and then. And while the company once grudgingly accepted the ubiquitous piracy of Microsoft products in public schools, these days Microsoft (through industry watchdogs) is diligently—some might even say eagerly—suing school systems to get that dough. It all begins with a lawyer's demands for an exhaustive, districtwide system audit, which itself would bankrupt an underfunded school system.

But open apps will always be there, without subscription fees. You just need a geek to manage 'em for you. Every high school has a creepy old custodian who keeps the boilers running and builds things the school needs. How about pairing that person off with a creepy old geek who, when a teacher needs to teach a geography unit, can locate open-source code and build and install compatible apps for each of the school's several hundred machines?

> Maybe it's time to found that Apple-based religion.

It can happen. OpenOSX.com (760/935-4736) sells an "Office" disc that has Word- and Excel-compatible word processors and spreadsheets, as well as GIMP (you can discover on your own the war raging between OpenOSX.com and MacGIMP.com)—all for 30 bucks, a mere morsel of the cost of Microsoft Office and just a third of AppleWorks' price.

The other Big Win of putting open-source apps in schools is that kids will think of those programs as the crud The Establishment forced them to use, and, seeking an outlet for rebellion, bango, they'll buy PowerBooks and join a new Toronto-based religion that's also a political party and body-piercing system.

That's a big opportunity for Apple. They've already got the operating system, Steve Jobs is ten times the charismatic leader L. Ron Hubbard ever was, and creating a political party is just a question of paperwork.

As for the piercing, it's nothing that anyone with an ice cube, a lighter, a straight pin, and a staple remover can't address. But that was another bet (and an entirely different story). □

When at a restaurant, Contributing Editor (and soft-drink aficionado) ANDY IHNATKO (www.andyi.com) always asks for a Coke in "the biggest glass you've got."

ANDY IHNATKO

If You Can't Beat 'em, Cheat 'em

Open-Source Showdown

IF YOU CAN'T BREAK A JOB DOWN INTO 24 12-OUNCE UNITS of effort—or so the theory goes—then surely it's not worth doing, if indeed it's doable at all. In fleshier tones, this means that whatever the job is, be it installing new server software or laying a transatlantic fiber-optic cable, you should be able to get it done before you finish one case of your favorite beverage. Crack open the first Coke while you're mulling over the task's basic parameters, and then apply additional cans to the problem as needed. You should be opening your last can to toast the job's successful completion.

This highly advanced theory of project management is one my pal Joe and I developed a while ago, possibly while under the influence; neither he nor I are drinkers, but now that I read it here in black and white, I can't deny that the idea has an undeniable hops-and-barley sort of logic to it.

Naturally, it didn't take long for us to morph our theory into a way of regularly testing each other to see if one of us might just be a colossal wuss.

The Challenge Is Made

"What you don't get about OS X," I explained, sensing that Joe just didn't get something about OS X, "is that thanks to its rich, nougaty Unix center, the Mac is now an open home for open software. Don't you agree that this is an elegant way to restore Apple's presence in markets that are hard to evangelize?"

He sighed. "Yeah, yeah—but bringing an open-source app over to OS X is a nontrivial exercise," he said. And then he double-crossed me. Instead of allowing himself to get drawn into the hour-long argument I'd hoped for—*Letterman* was a rerun that night—he challenged me to build an OS X version of GIMP (the popular open-source image-editing app) within one case of beverages, and then he hung up the phone.

I mean, what kind of a friend is *that?*

The Battle Is Joined

I downed the first Coke while downloading source files from SourceForge.net. I drank the ninth as I decided that I had to go back to Darwinfo.org to brush up on a lot of fundamentals. The seventeenth Coke went down as I realized that simple submolecular entropic fluctuations in my hard drive's magnetic fields would create an executable binary of GIMP sooner than I would. And I enjoyed the rest of the Cokes as I watched *Space Camp* (the 1986 epic starring Kate Capshaw), mocking its technical inaccuracies in an effort to restore some shred of my flagging self-image as a major geek.

So compiling open-source apps to run on Mac OS X *is* nontrivial. I mean, holy cow, you almost have to actually know what you're *doing* and junk. I'm a simple, old-fashioned sort of guy. I go to see new *Star Wars* films on the first screening of the first day; I drink the milk after I finish a bowl of Cocoa Puffs; and when I get Unix dirt under my nails, it's usually from messing around with the command line, not from installing and maintaining window managers and other GUIs. So while I've built open-source stuff before, I was in over my head with Darwin and GIMP.

I was so browbeaten (and admittedly jittery from all the phosphoric acid, high-fructose corn syrup, caramel color, caffeine, and natural flavors) that even after I caved and downloaded Fink (http://fink.sourceforge.net), a tremendously nifty package manager that more or less automatically builds and installs Unix software on OS X, I *still* couldn't get everything working—and then I realized that I had forgotten to log on to OS X as root. This is the Unix equivalent of trying to walk through a door without first twisting the doorknob.

In the end, I just bought MacGIMP (www.macgimp.org). You send $30, and MacGIMP sends you a CD that installs the utility and all its required support systems (including the Darwin version of Unix's windowed GUI system).

If You Can't Win, Cheat

Of course—getting back to my pal Joe's 24-can challenge—this gambit was technically (or to put it another way, *totally*) cheating. But that was nothing I couldn't smooth over with an intense and highly aerobic session of lying.

> Cheating is nothing that can't be smoothed over by intense and highly aerobic lying.

At least I acknowledged reality. Open-source software will probably never have a direct effect on the masses. Even a world where apps are built from open-source software but sold and installed like traditional software is no paradise. MacGIMP works great. For 30 bucks, you get an app that brings you 80 percent of Adobe Photoshop's functionality. But it's not a true Aqua app. It lacks OS X's cleanliness, simplicity, and style.

< continues on page 119

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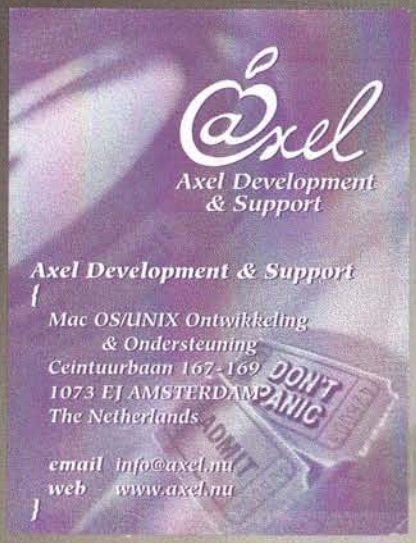

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